Five-Year Report on the

Status of Forestry

April 2001 – March 2006

Protecting & Managing *our Future*

Manitoba

To His Honour
The Honourable John Harvard
Lieutenant-Governor of Manitoba

Your Honour:

As Conservation Minister, I am pleased to present the *Five Year Report on the Status of Forestry* to the Legislature for the period ending March 31, 2006. To fully address the many changes that were made during this period, this report includes more detail than past reports. In 2002, *Next Steps: Priorities for Sustaining Manitoba's Forests*, outlined the new direction of forest management in this province. This report addresses the five priorities that were outlined in the Next Steps document.

The Province of Manitoba is seeking to gain a better understanding of our forests. Updating the province's forest inventory and collecting a broader array of information on Manitoba's forests – taking all of its functions into consideration – are some of the ways this is being accomplished.

Manitoba continues to be a leader in the maintenance and enforcement of regeneration and renewal standards for harvested forests. The protection of Manitoba's forests through the management of significant forest health issues continues to evolve.

To help increase Aboriginal involvement in the forest sector, the cross-departmental Sustainable Forestry Unit was created in 2003. During this reporting period, opportunities for forestry developments were identified for First Nations communities, and members of First Nations were trained in volume sampling techniques and completed forest survey contracts with the province and industry.

The promotion of a sustainable forest economy included a new timber auctioning process and the establishment of non-profit forest industry organizations, FERIC and Forintek, in the province. Forest industry in Manitoba continued to contribute to the economy.

Guidelines were updated by the Forest Practices Initiative with four new *Forest Practices Guidebooks*. To reflect and address the many changes in managing our provincial forests, work began on updating *The Forest Act*.

This *Five Year Report on the Status of Forestry* not only addresses priorities outlined in the Next Steps document but also the province's diversified approach to meeting these goals. Significant challenges and new issues facing Manitoba's forests are also addressed.

Yours truly,

Stan Struthers

Stan Struthers
Conservation Minister

To the Honourable Stan Struthers
Minister of Conservation

Sir:

I am pleased to submit the *Five Year Report on the Status of Forestry*, to the Legislature for the period April 1, 2001 to March 31, 2006.

This report identifies the province's activities to meet the goals outlined in the document, *Next Steps: Priorities for Sustaining Manitoba's Forests*. Issues and challenges before Manitoba's forests are identified, and the department's programs are reviewed.

Yours Truly,

Don Cook
Deputy Minister

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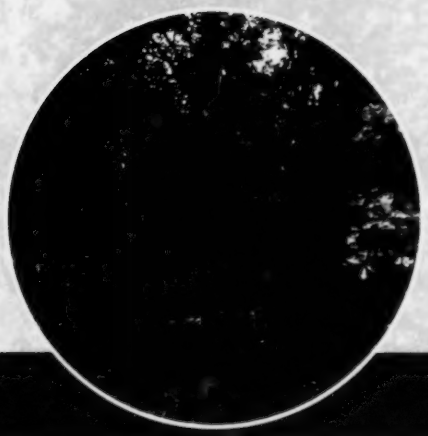


Executive Summary

Manitoba continued to balance economic development in the forest sector with sustainable management of the province's forests. The province developed comprehensive new forest inventories that included wetlands and wildlife habitat which were factored into wood supply calculations. The sustainable development of forest resources was promoted by the province through fostering value-added initiatives and encouraging forest products certification.

Consideration was given to the cultural and social values associated with the forest, non-timber products and recreational opportunities in Manitoba's forests. A number of programs and projects have been established to serve these diverse needs. An ecologically-based approach to managing forests was identified as a priority and adopted by the province to sustain the forest and all of its functions.

This report addresses the priorities outlined in the Manitoba Conservation policy document, *Next Steps: Priorities for Sustaining Manitoba's Forests*, released in 2002. The following are highlights of the 2001 to 2006, reporting period.

SUSTAINABLE FOREST MANAGEMENT AND DEVELOPMENT

- The Forestry Branch of Manitoba Conservation made improvements to the forest inventory by collecting a wider array of forest attributes.
- A pilot project was initiated between the Forestry Branch and Louisiana-Pacific Canada Ltd. to operationally test a new forest inventory design using an ecosystems-based approach in portions of Forest Management License-3.
- The cross-departmental Sustainable Forestry Unit was created in 2003, to focus on economic development, creating opportunities in the forest sector and assist in developing value-added forest products and opportunities for Aboriginal communities.
- Manitoba Conservation explored opportunities for hardwood-based forestry developments in southeast and northwest Manitoba.
- The First Nations Forestry Limited Partnership and Ainsworth Lumber Company began negotiating a business relationship to pursue a hardwood-based engineered wood mill development in the Interlake and southeast corner of the province.
- In 2005, the Province of Manitoba and Swampy Cree Tribal Council signed a Memorandum of Understanding (MOU) regarding a commitment of the hardwood

resources in northwest Manitoba. The MOU will provide Swampy Cree Tribal Council time to assess market opportunities with a commitment by the province that hardwood volumes would be available for a viable project.

- The Northern Forest Diversification Centre, located in The Pas, received $400,000 annually for three years from the federal/provincial Economic Partnership Agreement fund. The centre provided training and marketing support to northern communities in developing economic opportunities through non-timber forest products.
- In 2004, a non-profit forest research organization, Forintek Canada Corp., established a secondary forest products industry advisor in Winnipeg and a primary industry advisor in The Pas with support from the Canada-Manitoba Economic Partnership Agreement.
- Members of Manitoba's forest industry obtained third party forest products certification to verify that the wood products originated from sustainably managed forests.

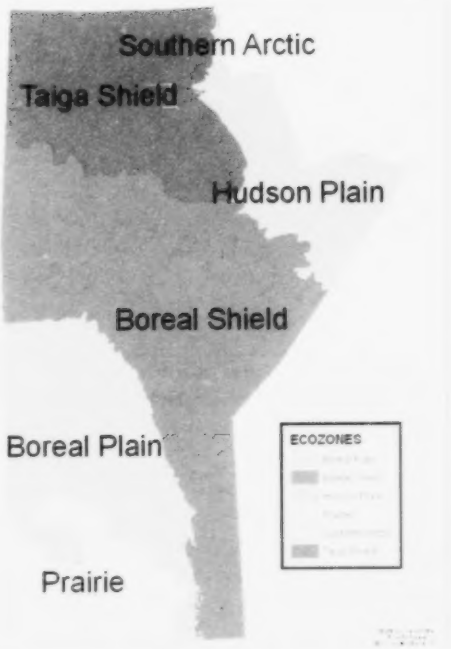
SUSTAINING MANITOBA'S FORESTS AND ITS CULTURAL AND SPIRITUAL VALUES

- In 2003, a Memorandum of Understanding was established with the Canadian Forest Service to study forest sustainability and climate change effects through the establishment of a series of long-term ecosystem monitoring plots. Information from these plots will be incorporated into the new National Forest Inventory for Canada.
- The branch worked closely with wildlife managers and the forestry industry to incorporate critical caribou habitat requirements into the wood supply determination.
- The Forestry Branch administered a Dutch elm disease (DED) management program in 38 communities in the province through cost sharing agreements.
- Forest insects and diseases, such as spruce budworm and dwarf mistletoe, were monitored and managed throughout the province.
- The Government of Manitoba's Protected Areas Initiative expanded the network of protected land area that represents the biodiversity in each of Manitoba's natural regions to 5.4 million hectares.

- The East Side Lake Winnipeg Planning Initiative, renamed Wabanong Nakaygum Okimawin, was established during the reporting period to bring government, local communities, First Nations, environmental organizations and industry together in determining a large area land-use plan.
- To maintain public involvement and to provide information about Manitoba's forests and forestry sector, the Forestry Branch maintains a website and supports public education programs, such as Envirothon, ForestEd Teacher's Workshop and National Forest Week.
- The Government of Manitoba provided financial and in-kind support to organizations, such as the Manitoba Model Forest Network, Manitoba Habitat Heritage Corporation and the Manitoba Forestry Association.

Introduction

Manitoba's forest sector faced many important issues during the reporting period of April 2001 to March 2006. The Forestry Branch continued to evolve to meet the challenges of an ever changing forest sector by creating new programs and strategies that promote a sustainable forest economy and protect Manitoba's forests.



Forest Regions of Manitoba

In March 2002, a Manitoba Conservation policy document was introduced that reflected this changing approach to forest management *Next Steps: Priorities for Sustaining Manitoba's Forests*. The Next Steps document outlined five priorities for the province:

1) increase scientific and traditional knowledge of Manitoba's forests
2) enhance forest stewardship
3) increase co-management, employment and economic development opportunities for Aboriginal communities
4) promote a sustainable forest economy
5) update and improve legislation and guidelines.

Used as a backdrop for this report, the Next Steps document represents the current direction of the Government of Manitoba. This report will focus on the Forestry Branch's efforts towards achieving these five priorities.

While the Forestry Branch took the lead in the protection and management of Manitoba's forests, many other divisions of Manitoba Conservation had an important role. Regional Operations, Fire Program and Headquarters Operations delivered forestry or forest protection programs, and other Conservation programs / branches, including Parks and Natural Areas and Wildlife and Ecosystem Protection, provided land use programs that included forested areas. Environmental Stewardship, the Sustainable Resource Management Branch and the Environmental Assessment and Licensing Branch provided support through public-lead forest initiatives and Environmental Licensing of forestry-related operations in the province.

Forestry Branch staff administered forest programs that included forest management, Aboriginal forestry development, industry development, forest pest and disease management, forest renewal, urban forestry and forest inventory and wood supply analysis. The branch was also responsible for *The Forest Act* and *The Dutch Elm Disease Act*.

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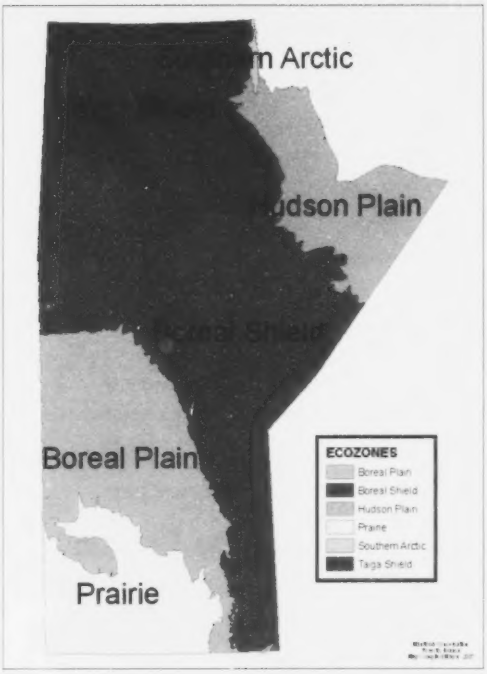

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I – Increase Scientific and Traditional Knowledge of Manitoba's Forests

A thorough understanding of forest functions and processes is integral to the management and protection of our forests.

To have more information on Manitoba's forests, more data needs to be gathered and shared about forest functions and the forces that affect them. Understanding the role of Manitoba's forests, in relation to the rest of Canada and the world, is an important step in determining the province's contribution to global resource management.

Implementing Ecologically-Based Forest Inventories in Manitoba

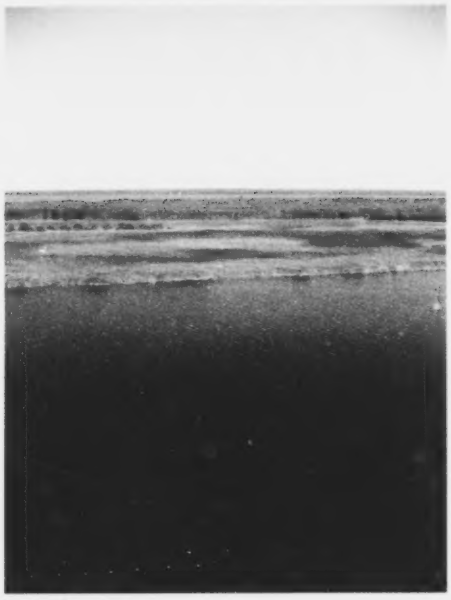
The province moved towards a new forest inventory standard that is based on a scientific approach which includes gathering knowledge and additional information about Manitoba's forests. Recognizing the need for an ecologically based forest inventory, the province formed the Forest Land Inventory Technical Advisory Committee (FLITAC) with stakeholders.

AN ECOSITE BASED FOREST INVENTORY

FLITAC identified the key requirements for a new forest lands inventory approach. The province in cooperation with Louisiana-Pacific Canada Ltd. operationally implemented this new inventory design in Forest Management Units (FMUs) 13 and 14 in western Manitoba. The new inventory process focuses on collecting a wider array of forest attributes, such as canopy layer and rank, year of stand origin, tree heights, wetland ecosystem classification and landform and terrestrial ecosites. Information gathered from the pilot project improved the inventory process which was then applied in other areas of Manitoba.

A key part of the improved inventory design is the classification of forest and wetland ecosites. Ecosite classification can be used to effectively manage our forests and can assist forest managers in the determination of site productivity and quality, erosion issues and future habitat development. Ecosite interpretations are to be used as a general guide. Individual site evaluations should still be conducted to determine potential impacts and outcomes. Ecosites also help determine a sustainable wood supply, provide a basis for good forest management and planning and contribute to habitat modeling and the assessment of biodiversity.

Detailed data was collected from more than 500 plots across the pilot project area. The information gathered was analyzed and resulted in the



Wetlands

creation of 24 distinct terrestrial ecosites and ten wetland ecosites. Some variability is expected within each ecosite class and within a range of vegetation and soil types. Each of the 24 ecosites is defined by the dominant species of trees, shrubs and herbs and the characteristic soil type along with many other factors.

Wetlands play a major role in many of Manitoba's ecosystems. In the past, wetlands were not well represented in forest inventories and the value of these wetlands was underestimated. Wetland areas were surveyed, and a wetland ecosite key was developed.

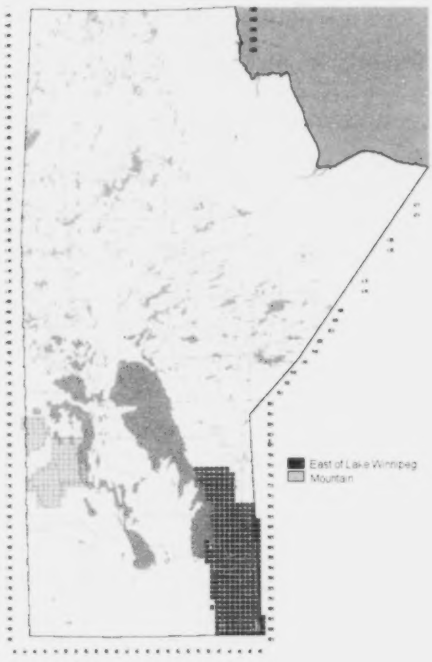
In 2001, Ducks Unlimited Canada Inc. began working on the Pasquia Project, which classified wetland habitat using satellite imagery in conjunction with field surveys. Several organizations, including Manitoba Conservation, partnered with Ducks Unlimited in this Boreal Plains inter-provincial initiative.

The Pasquia Project was completed in 2005, and Manitoba Conservation is now considering incorporating the information collected on wetland classification to further enhance the inventory and is looking at collaborating with Ducks Unlimited in a FMU 12 inventory project.

NEW AND UPDATED FOREST INVENTORIES

Inventories in several FMU's were updated during the reporting period. These inventories were interpreted from aerial photography that was captured in the mid to late 1990's and served as the precursor to FLITAC inventories that were piloted in FMU's 13 and 14.

Hardcopy forest inventory maps from previous decades were digitized and loaded into the provincial inventory database. Manitoba Conservation has made all the active forest inventories available on the Manitoba Land Initiative website.



Forest Inventories

NATIONAL FOREST INVENTORY SYSTEM

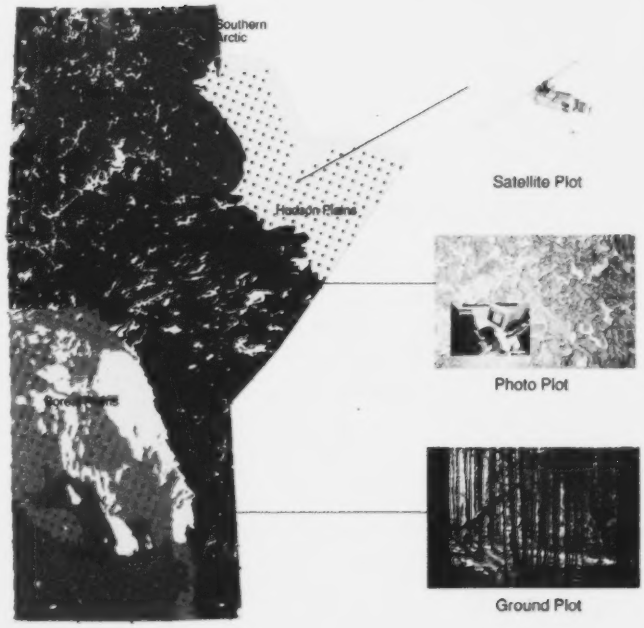
The Forestry Branch worked closely with the Canadian Forest Service and other provincial and territorial jurisdictions to develop and implement a National Forest Inventory Information System. The National Forest Inventory Information System, an initiative of the Canadian Council of Forest Ministers, provides stakeholders with direct web-based access to Canada's forest resource information.

MANITOBA'S ECOSYSTEM MONITORING NETWORK

The Forestry Branch co-operated with the Canadian Forest Service to establish an Ecosystem Monitoring Network comprised of satellite (1096), photo (462) and randomly located ground (97) plots across Manitoba's ecozones. The Manitoba initiative is part of the National Forest Inventory endorsed by the Canadian Council of Forest Ministers.

The purpose of the Ecosystem Monitoring Network is the long-term assessment and monitoring of the state and sustainable development of Manitoba's and Canada's forests. It will provide data in support of national and international reporting commitments related to forest health, biodiversity and forest productivity.

Manitoba's Ecosystem Monitoring Network provides information on traditional forest inventory attributes and a framework for collecting additional data relevant to climate change. The collection and reporting of information based on a set of uniform standards allows for consistent reporting across the country and for tracking changes to Canada's forests over time.



Forest Productivity, Growth and Yield

The Manitoba Growth and Yield Program determines the productive capacity of natural and managed forest stands in Manitoba. Forest stand growth dynamics are measured and monitored through a long-term Permanent Sample Plot (PSP) Program. PSPs are established in different forest stand/site types and re-measured every five years. Data from these plots are used to establish growth models (computer software) that can predict stand development over time. Manitoba has 286 active PSPs located throughout the province.

The provincial growth and yield program also developed single tree volume equations and site index equations for wood supply calculations and biomass equations for use in carbon budget models. These equations were based on extensive stem analysis and tree measurements on taper, height growth, diameter growth, bark thickness and age. This helped develop ecologically-based taper equations used in preparation of merchantable volume tables for commercially important tree species in Manitoba.

Temporary timber volume sampling plots were also used to develop yield curves for the wood supply analysis for FMU's 13 and 14 in western Manitoba, the Pineland Forest Section and Tembec Enterprises Inc. – Pine Falls Operation's Forest Management License Area.

WOOD SUPPLY

The Forestry Branch is responsible for determining the sustained yield capacity of Manitoba's forests and the assignment of the annual allowable harvest levels on the available forested land base. Using a contemporary forest model, the Forestry Branch calculates the wood

Tissue Layers
Scleral Shield
Fibers

supply, which is the quantity of timber available for harvest over time.

The Forestry Branch uses forest modeling software that assesses the forest resource at two levels. The strategic level determines long-term harvest levels over a 200 year planning horizon, and the operational level determines short-term harvest levels over a 25 year planning horizon. Sustainable resource indicators, such as forest growing stock and wildlife habitat, are included.

Provincial policies and guidelines that govern timber harvesting activities in Manitoba, such as maximum harvest block size, regenerating vegetation green-up delays and wildlife tree and patch retention, are also incorporated into the modeling. The harvest sequence generated by the model will serve as the foundation for forest management plans submitted for government approval.

Using this new forest modeling approach, the Forestry Branch determined a new wood supply for FMU's 13 and 14 in the Mountain Forest Section.

TECHNICAL ADVISORY COMMITTEES

Technical Advisory Committees (TAC), comprised of representatives from Manitoba Conservation, Regional Integrated Resource Management Teams (Regional Operations) and forest industry, were established to provide input into the wood supply modeling process. These committees play a critical role in the update of the forest inventory by incorporating past timber harvest, fire depletion, forest renewal activity and information on unique areas and sensitive wildlife habitat. Land under Manitoba's Protected Areas Initiative and Crown land selected to fulfill outstanding Treaty Land Entitlements are also removed from the wood supply.

In 2004, the Forestry Branch began a new wood supply determination process with Tembec Enterprises Inc. – Pine Falls Operation for Forest Management Licence-1 in eastern Manitoba. A regional TAC was established to identify local resource management issues that could affect the wood supply analysis. An expanded buffer along the Manigotagan River, new protected areas, recent Treaty Land Entitlement selections and wildlife habitat requirements were incorporated into the forest resource analysis for the harvest level determination.

CRITICAL HABITAT PROTECTION

Woodland caribou are an important wildlife species of the boreal forest of eastern Manitoba and have been extensively monitored. In 2005, a landscape management strategy for the Owl Lake herd was released by the Eastern Manitoba Woodland Caribou Advisory Committee. The report identified the critical winter range requirements to sustain the herd over a 200 year planning horizon.

The branch worked closely with wildlife managers and the forest industry to incorporate critical caribou habitat requirements into the forest modeling process and to generate a sustainable wood supply for the area. In addition to woodland caribou, five other wildlife habitat suitability indices were developed for habitat evaluation under the current forest management strategy.

Woodland Caribou

PROTECTED AREAS INITIATIVE

As part of a commitment to establish a network of protected areas, the province established the Protected Areas Initiative in 1990. To date, 5.4 million hectares have been designated as protected areas in Manitoba increasing from 350,000 hectares in 1990. The Protected Areas Initiative works in consultation with other branches and departments, various organizations, First Nations, local communities and industry. The need to complete a network of protected areas in this province is considered a priority for Manitoba.

The Manigotagan River Provincial Park, created in 2004, will ensure the natural splendour and cultural and recreational values of the Manigotagan River are preserved. The new park will respect the treaty rights and values of regional communities.

Additionally, in 2004, the province designated rare river-bottom forest in the Red River Valley as the Jennifer and Tom Shay Ecological Reserve. Other protected ecological reserves in forested areas created under the Protected Areas Initiative include the Brokenhead Wetland Ecological Reserve, Birch River Ecological Reserve and Armit Meadows Ecological Reserve.

During this reporting period, Wood Supply Impact Assessments were completed for the proposed Lowlands National Park, Manigotagan River buffer and the Bell and Steeprock Canyons Protected Area in FMU 14 (Porcupine Provincial Forest).

WILDFIRE LOSSES

The Forestry Branch utilizes a geographic information system to digitally map and report on forest fires. Table 1 displays fire statistics by cause for each of the five years and includes five year and 75 year averages.

From the table, it can observed that four of the five years had a lower average number of fire starts and lower average area burned. Human caused fires occurred at a frequency below the long-term average, both in number and area burned. The long-term trend of lightning caused fires occurring less frequently persisted, but these fires continued to cause more area loss than human caused fires.

In 2003, fire starts and area burned were about three times the long term average. The majority of the forest fires in 2003, were in remote areas of northern Manitoba in the observation zone where fires are not typically suppressed. In 2003, the number of fires and the area burned in the protection zone was also above the five year average. Most of these fires occurred on the

Table 1 – Annual Fire Statistics by Cause

	NUMBER OF FIRES					ESTIMATED AREA BURNED (HECTARES)					OBSERVATION ZONE (EST.)		PROTECTION ZONE (EST.)	
YEAR	HUMAN	%	LIGHTNING	%	TOTAL	HUMAN	%	LIGHTNING	%	TOTAL	#	Area (ha)	#	Area (ha)
2001	234	43%	304	57%	538	5,342	6%	74,312	94%	79,654	72	34,402	466	45,252
2002	500	66%	254	34%	754	14,321	17%	69,920	83%	84,241	64	20,555	690	63,686
2003	666	55%	548	45%	1,214	148,311	16%	778,630	84%	926,941	166	518,636	1,048	408,305
2004	110	47%	123	53%	233	1031	4%	24,745	96%	25,776	30	21,094	203	4,682
2005	110	44%	138	56%	248	5,374	8%	61,798	92%	67,172	30	33,420	218	33,752
Total	1620		1,367		2,987	174,379		1,009,405		1,183,784	362	628,107	2,625	555,677
AVG (5 YEAR)	324	55%	273	45%	597	34,876	14%	201,881	86%	236,757	72	125,621	525	111,135
AVG (1930-2005)	289	68%	137	32%	426	58,350	28%	153,761	72%	212,111	n\a	n\a	n\a	n\a

border between the two zones and were generally not suppressed or had limited suppression action taken on them, since no lives or property were threatened.

The Forestry Branch continued to work with the Fire Program to establish fire priority zones, review forest industry fire plans, develop innovative fire mapping and analysis capabilities and assess the impact that fire and other natural disturbances have on forest ecology. An improved method of incorporating fire losses into the wood supply calculations should help ensure forests are managed sustainably.

Climate Change Research in Manitoba's Forests

Climate change is recognized as a global issue that could significantly affect Manitoba's forests.

Forests are large reservoirs of atmospheric carbon being stored as standing biomass (trunks, branches, leaves and roots), soils and peatlands. Forests exchange carbon with the atmosphere through photosynthesis, respiration and decomposition. Forest disturbances, such as fire, insect and disease outbreaks, decomposition of wood products and forest litter and deforestation can cause carbon to be released into the atmosphere. In Manitoba, forests occupy over 23.3 million hectares or roughly half of the land area and play an important role in the global carbon cycle.

Manitoba Conservation, working with other provincial jurisdictions and the federal government, began addressing research, technology and infrastructure needs to determine the carbon stored in Manitoba's forests. The Forestry Branch is also assisting the Canadian Forest Service with the development of biomass models to help determine carbon content in Manitoba's forests.

Manitoba Conservation supports international climate change studies currently underway in northern Manitoba. A research project that is partly funded by the U.S. Department of Energy Program for Ecosystem Response and Manitoba Hydro is being conducted near Thompson by the University of Wisconsin. The effects of warming on ecosystem carbon budgets and on nitrogen use by vegetation and microbes and the effects of warming on tree phenology and stand structure are being examined.

Partnerships and Exchange of Information

Sharing and exchanging information is an important aspect of gaining a better understanding of the forest and the forces that affect them. The formation of partnerships with different groups and government agencies helps the exchange of information and allows for the pooling of resources to achieve a common goal.

- Manitoba Conservation, through the Sustainable Development Innovations Fund, provided funding and support for research projects conducted by the University of Winnipeg's Centre for Forest Interdisciplinary Research.
- The Forestry Branch partnered with the University of Manitoba on a Dutch elm disease research project.
- Manitoba Conservation joined forest industry to become a partner in the Sustainable Forest Management Network, which develops strategies to maintain bio-diversity and sustainability in the Boreal Forest.

- Supported by Manitoba Conservation, the Manitoba Model Forest promotes sustainable forest management through research and collaboration on working-scale projects.
- The Forestry Branch was represented on the Advisory Board for Manitoba Hydro's Forest Enhancement Program and provided technical advice to the committee which provides funding for activities, such as tree planting and forest education.
- Manitoba Conservation and the Forestry Branch are participating in the current National Forest Strategy (2003-08) and the Canada Forest Accord with the Canadian Council of Forest Ministers.
- The Forestry Branch supported scientific research conducted by the Northern Forestry Centre, Canadian Forest Service on simulating fire regimes to evaluate forest management policies regarding the emulation of natural fire patterns in harvest planning. The project is also supported by the Innovative Research Initiative Program of Natural Resources Canada and BIOCAP Canada.

Public Education

The Forestry Branch recognizes the need to remain accessible and open to the public. To help fulfill this goal, a world-wide web project was initiated in 1998. In 2000, the website was reformatted to the new provincial design and was expanded. In 2001, the content of the website expanded to include insect and disease alert pages, descriptions of forest renewal and planning programs and forest practices reports and guidelines.

Forestry Branch staff also participated in a number of public events to provide information on forest related issues in Manitoba. The branch's activities included operating a booth at the Royal Manitoba Winter Fair in Brandon, organizing tree planting and seedling donations with the Manitoba Forestry Association in honour of National Forest Week and Arbor Day, ForestEd and assisting with Manitoba Envirothon.

Directories of primary and secondary wood-using industries in Manitoba were published in 2001, in conjunction with the Canadian Forest Service and Manitoba Industry, Trade and Mines.

Students participating in Manitoba Envirothon

II – Enhance Forest Stewardship

Manitoba's forests provide habitat for a diverse group of animals and plant life and serve an important role in the maintenance of healthy ecosystem functions, including water renewal, carbon fixing and oxygen replenishment. In urban areas, trees remove pollutants, reduce heating and cooling costs for homes and businesses and beautify our neighbourhoods.

The economic value of Manitoba's forests is measured by a diverse range of activities, including logging, non-timber forest products and tourism. Forests also play a role in the cultural and spiritual well-being of the people of this province. The stewardship and protection of our forests is the responsibility of all Manitobans.

Forest Renewal

The renewal and regeneration of Manitoba's forests, after harvesting activities and forest fires, is important to the conservation of our forest resources and in fostering a sustainable forest economy.

The Forestry Branch Renewal Program ensures the satisfactory regeneration of all harvested forests and seeks to maintain the diversity of forest ecosystems. The principle components of the program include the promotion of natural regeneration, site preparation, tree planting, competitive vegetation management and monitoring through surveys.

Currently, the responsibility for the renewal of Manitoba's forests is shared between the province and industry. Monitoring of regeneration status is carried out by provincially trained and licensed surveyors working for the province and industry.

Pre-harvest surveys are conducted in stands selected for harvest, and the appropriate forest renewal techniques are determined. Regeneration surveys, done five to seven years after harvest, assess the stocking of a renewed forest, the seedling density and presence of forest pests to determine whether or not an area has successfully regenerated. Following that, Free to Grow (FTG) surveys are conducted 14 years after disturbance to determine whether or not the regenerating stands are capable of regenerating to their previous composition without further management activities.

During this reporting period, Tolko Industries Ltd. along with Tembec Enterprises Inc. – Pine Falls Operation conducted FTG surveys in their Forest Management License (FML) areas. Louisiana-Pacific Canada Ltd. will begin conducting FTG surveys in 2008. A large database was established documenting the results of Regeneration and FTG surveys, and future reports will summarize and analyze the results.

To better evaluate the effects of insects and diseases on regenerating forests, the branch

continued to monitor and assess Regeneration Performance Assessment plots previously established in plantations of the four major tree species: white spruce, jack pine, black spruce and red pine. The project was completed in 2003, and showed the young stands to be healthy for the study period with only some stands having competition-related problems.

To address issues related to silvicultural (the growing and tending of trees) practices in Manitoba and to provide a forum for technology and knowledge transfer, the Manitoba Silviculture Technical Committee was created in 2002. The committee is comprised of government and industry members with a mandate to review current practices, provincial renewal standards and all aspects of silviculture in the province.

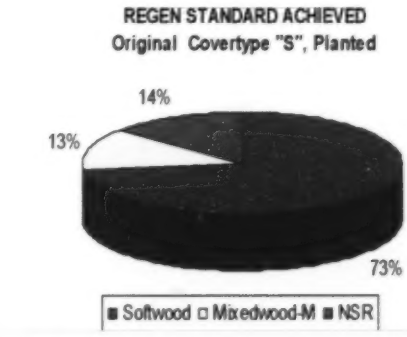
MANITOBA'S FOREST RENEWAL STANDARDS

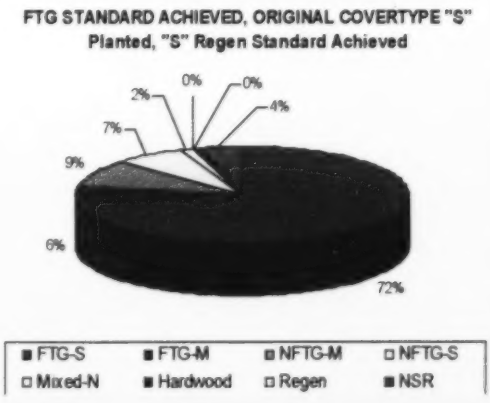
Manitoba is recognized as a leader within Canada in forest renewal standards and enforcement of these standards. Manitoba was one of the first provinces to develop forest renewal standards which has enabled the province to meet a goal of maintaining the existing mosaic of stand types on the landscape. Due to the strong commitment of Manitoba Conservation and the province's forest industry, nearly 100 per cent of the area harvested in the province is surveyed to ensure adequate regeneration of forests.

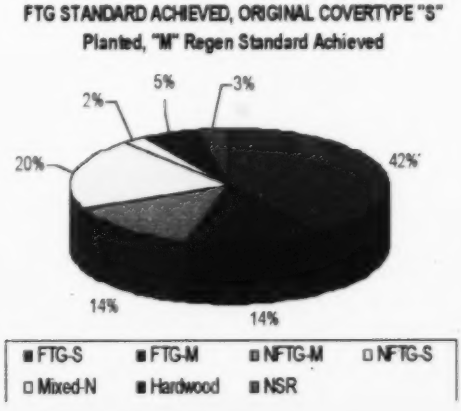
The province began conducting Regeneration surveys in the late 1970s. The current procedures and standards were implemented in 1986. From 1991 to 1993, the province partnered with the Canadian Forest Service to conduct research on the factors that affect the growth of the major tree species by age 14 years. In 1994, Manitoba began conducting Free to Grow surveys and was one of the first provinces to establish Free to Grow standards based on regionally collected data.

A publication documenting 10 years of Free to Grow survey results is currently being prepared. It will provide an in-depth review and report of survey results. Initial results show only five per cent of planted sites and 10 per cent of naturally regenerating sites are not satisfactorily restocked. These sites are prescribed for re-treatment.

Surveyor







VEGETATION MANAGEMENT

A preliminary analysis of the results of 10 years of FTG and Regeneration surveys indicated a trend towards an increasing amount of hardwood tree species regenerating on softwood sites. This illustrated the need for better vegetation management procedures.

In the past, herbicides were primarily applied by fixed-wing aircraft to combat aggressive shrub and hardwood competition. During this reporting period, there was a shift to ground-based vegetation control. Additionally, with increased availability, rotary-winged aircraft replaced much of the fixed wing applications. These two application methods offer significant improvements in accuracy and treatment success.

HARVEST AND RENEWAL TRENDS

The area harvested was similar to the previous five year reporting period of 1996-2000, however the proportion of softwood to hardwood harvested continued to decline. One reason may be the increased harvesting and management of mixedwood stands, particularly in western Manitoba. Depending on species composition, these mixedwood stands are often classified as hardwoods.

The area of hardwood harvested and left to regenerate naturally increased throughout the reporting period. This was primarily due to hardwood use by Louisiana-Pacific Canada Ltd. which reached and maintained full capacity. Hardwood sites are typically left to regenerate naturally due to their pronounced regenerative capacity.

Even though the actual area of softwood harvested remained relatively the same, the amount treated for renewal increased. The area planted and seeded increased, while the amount of scarification (loosened soil) and pre-planting site preparation decreased (Table 2).

Table 2 – Area harvested, treated and surveyed [hectares (ha)]

	2001-05	1996-00	1991-95	1986-90	1981-85
Harvested:					
Hardwood	28,352	23,000	6,769	5,045	na
Softwood	56,820	56,000	50,984	53,377	na
Total	**85,172**	**79,000**	**57,753**	**58,422**	**54,149**
Planted	40,204	33,220	31,128	29,475	11,735
Scarified	9,408	10,818	7,885	8,810	14,347
Seeded	956	700	37	1,645	1,299
Treated	50,568	44,738	39,050	39,930	27,381
Percentage Of Softwood Treated	89	80	77	75	
Left for Natural Regeneration	6,252	11,262	11,934	13,234	26,768
Percentage Of Softwood Left for Natural Regeneration	11	20	23	25	
Silviculture Surveys	94,258	67,836			

TREE IMPROVEMENT PROGRAM

Since the 1980s, Manitoba Conservation has been directing and co-operating with other program partners, including Tolko Industries Ltd., Louisiana-Pacific Canada Ltd. and Tembec Enterprises Inc. – Pine Falls Operation in the establishment of a Tree Improvement Program for black spruce, white spruce and jack pine. To date, the program includes 14 seed orchards and 28 family tests.

Family tests are established to allow for the evaluation of families within the breeding zones by the performance of their offspring. Tests are measured at 10 and 15 years of age. The data are analyzed to determine breeding values and genetic ranking of each of the families. Based on the ranking, the seed orchard is thinned with the removal of genetically lower ranked families. In 2005, nearly 50 per cent of all seedlings planted across the province came from seed produced in seed orchards.

Discussions between industry and the Forestry Branch began in 2003, on incorporating genetic gain into the annual allowable cut calculations. A research project followed in 2004, with industry and the Forestry Branch, to quantify the genetic gain in the wood supply attributable to using stock produced by the Tree Improvement Program. Current research suggests a four per cent gain in growth and yield. This estimate will be revised with future research.

Manitoba Conservation, Tolko Industries Ltd., Ltd. Canada and Tembec Enterprises Inc. – Pine Falls Operation are co-operating in a national genetic conservation project to ensure seeds of native tree species from wild collections are properly stored and identified for long-term storage.

Forest Health

The Forestry Branch monitors the health of the forests by conducting research projects and forest pest surveys. Management of pest infestations to reduce damage is an important part of forest management in this province.

SPRUCE BUDWORM

Throughout the reporting period, spruce budworm was a serious pest in Manitoba's forests. Spruce budworm repeatedly feed on the needles of white spruce, balsam fir and to a lesser extent, black spruce causing reduced vigour and eventually tree mortality. Consequently, the Forestry Branch conducted a Spruce Budworm Management Program to minimize losses from this pest.

Area defoliated by spruce budworm and adjacent spray block on right

The Forestry Branch continually monitored spruce budworm populations throughout the province by performing field and aerial surveys and by deploying pheromone traps.

Moderate to severe outbreaks occurred in the Northwest region, Lake Winnipeg East area and the Spruce Woods area of southwestern Manitoba.

During this reporting period, spruce budworm damaged an area ranging between 65,550 and 131,135 hectares.

As part of the spruce budworm management program, a low-risk insecticide, Mimic® 240 LV (tebufenozide), was aerially applied to approximately 19,000 hectares per year in the Northwest region (FML-2). The insecticide mimics an insect molting hormone that causes larvae (caterpillars) to go into a premature and incomplete molt. The aerial insecticide application program has produced, on average, a mean population reduction of 82 per cent each year.

AERIAL PESTICIDE APPLICATION FOR SPRUCE BUDWORM MANAGEMENT

The province's integrated pest management approach involves the aerial spraying of low-risk insecticides, such as Mimic, to control outbreaks of spruce budworm along with the use of active forest management strategies carried out in co-operation with forest industry.

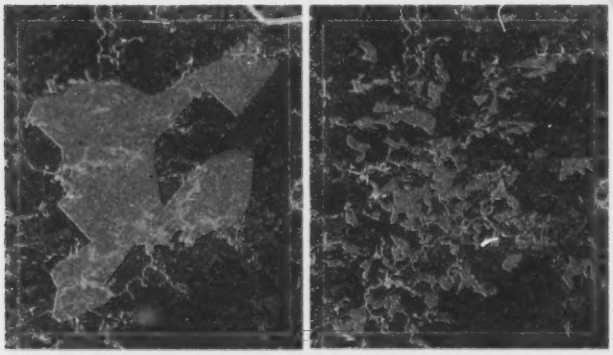
The branch's Pesticide Application Information System (PAIS) is a decision support system. It defines spray block location and spray priority determined by analyzing aerial outbreak survey data, post-spray larval samples, egg mass surveys, forest conditions and previous treatments. PAIS provides the technology that enables spray aircraft to deposit insecticide on specific forest stand types that are the preferred feeding sites of spruce budworm and most vulnerable to budworm damage. This reduces the size of spray blocks.

PAIS is also used for post-treatment analysis of the data obtained from the aerial guidance systems of the aircrafts deployed. This analysis is performed after each flight to ensure that all of the aircraft systems are operating properly and that the pilot is performing at the highest level. Manitoba is the only province performing this type of spatial post-spray analysis.

As a member of SEP.G-International, a partnership in forest pest management research, Manitoba is directly involved in furthering research into alternative biological and low-risk pesticides, the development of new aerial application technologies and spray modeling.

The Forestry Branch also partnered with the United States Department of Agriculture Forest Service in the development of new software called Spray Advisor. This software illustrates pesticide deposition in the forest. This information is used to create aquatic buffer zones which greatly reduce the risk of pesticides being deposited into lakes and rivers.

The Forestry Branch is a leader in North America in implementing aerial pesticide application technologies and is committed to minimizing off-target depositions of pesticides. These advancements are being applied to other aerial and ground-based vegetation management programs to further reduce the quantity of herbicides used, while increasing their effectiveness.



Spruce budworm treatment area in 1996 (left) and 2006 (right)

FOREST TENT CATERPILLAR

Forest tent caterpillar primarily feeds on trembling aspen, other hardwood species and shrubs. Infestations typically last four to five years. Repeated severe outbreaks of forest tent caterpillar causes reduced tree vigour and growth loss.

A forest tent caterpillar infestation continued in its widespread outbreak across southern and western Manitoba, including the Whiteshell, Nopiming, Hecla, Assessippi, Duck and Turtle Mountain Provincial Parks. Urban forests were also affected by this insect.

Populations of forest tent caterpillar declined in 2002, except in parts of the Western Region where damage was severe, including the Duck Mountain and Assessippi Provincial Parks. Some localized damage in this area continued in 2003, with minimal damage recorded in 2004.

EASTERN LARCH BEETLE

Infestations of the eastern larch beetle occurred throughout the Boreal Plain Forest of Manitoba causing extensive mortality in many tamarack stands. Three successive mild winters between 1998 and 2001, likely resulted in increased survival of overwintering eastern larch beetles. Attacks of the eastern larch beetle occurred in healthy tamarack stands but are usually associated with other stress factors, such as damage from other insects or environmental factors like fires or flooding.

DUTCH ELM DISEASE

First detected in Manitoba in 1975, Dutch elm disease (DED) has spread throughout the natural range of American elm in the province. American elms were planted extensively in Manitoba's cities, towns and rural shelterbelts because of their beauty and hardiness. To help protect and conserve this valuable resource, the province implemented a DED management program under *The Dutch Elm Disease Act* in co-operation with 38 cost sharing agreement communities.

Infected elm

MANITOBA DUTCH ELM DISEASE MANAGEMENT PROGRAM

More than 30 years after DED was first detected in Manitoba, tens of thousands of healthy elm trees still remain within urban areas of the province, while relatively few elm trees in the once huge natural stands along our rivers and creeks have survived this disease. The many remaining urban elms are a testament to the effectiveness of the provincial Dutch Elm Disease Management Program.

In communities, such as Brandon and Dauphin, thousands of large elms remain, dominating the local landscape. In the City of Winnipeg, the largest urban elm population in Canada is surviving the epidemic due to the vigorous management of this disease.

Success of the program hinges on the co-operation between the province and the participating communities through annual cost sharing agreements. Under these agreements, each community participating in the program ensures the proper care of elm trees, regular basal spraying with an insecticide to reduce native elm bark beetle populations, regular pruning of elm trees and replacement of elms lost to DED. On average, the program has been able to keep the loss of elms to DED at two per cent of the population each year which is within the program targets.

It is possible that these losses can be further decreased with a better understanding of the disease and how it is spread. A research project with the University of Manitoba that includes a Rapid Tree Removal Project began in 2005, and will determine the effectiveness of removing diseased elms shortly after the tree displays symptoms. The other component of this project is concerned with finding an alternative pesticide to control elm bark beetles.

DWARF MISTLETOE

Two species of dwarf mistletoe occur in Manitoba. Lodgepole pine dwarf mistletoe is the most significant disease of jack pine and eastern dwarf mistletoe is a significant disease of black and white spruce. Dwarf mistletoe, a parasitic plant, causes growth loss, deformity and tree mortality.

Dwarf mistletoe management consisted of post-logging sanitation treatments, herbicide treatment of edge infections, sanitation in juvenile stands and salvage harvesting. This was done predominantly in the Saskatchewan River Forest Section, Belair Provincial Forest and Interlake and Pineland regions.

ARMILLARIA ROOT DISEASE

Armillaria root disease is most severe in upland black spruce forests in Manitoba. In the Mountain Forest Section, intensive aerial and ground surveys used global positioning system technology to identify areas of root disease infestation and determine volume losses. A computer simulation model was used to predict volume losses over the next several years. This information helped focus harvest activity in the most severely infested areas.

Various site preparation methods were used in the Porcupine Provincial Forest from 2002 to 2004, to remove roots and stumps which harbour the root disease fungus. These site preparation methods are being monitored to determine which are the most effective in reducing root disease in the next generation forest.

INVASIVE PESTS

Increased trade and travel between the world's countries, along with the possible effects of climate change, could make Manitoba's forests vulnerable to infestations of invasive insects and diseases.

In 2001, Manitoba Conservation, the Canadian Forest Service, the Canadian Food Inspection Agency and the provinces of Alberta and Saskatchewan formed the Northwestern Exotic Forest Pest Advisory Council. Forestry Branch staff also participated in information sessions on the National Strategy on Invasive Alien Species in April 2004.

The branch developed a framework for a response plan to detect and manage invasive forest pests, such as the Asian long-horned beetle, emerald ash borer, banded elm bark beetle and mountain pine beetle.

Stand opening caused by Armillaria

Technology Developments

Updating and adopting improved computer programs used to quantify and manage forest resources is important to obtain accurate and meaningful information about Manitoba's forests. To better conduct resource evaluations, manage the Forest Resource Inventory and operate Geographic Information Systems (GIS), software and hardware applications were replaced or updated throughout this reporting period.

SILVICULTURE INFORMATION SYSTEM

TheForestManager (TFM) software program that tracks harvest and renewal activities, replaced the Manitoba Silviculture Information System in 2003.

TFM will be used to report on current and past activities, accurately describe current forest conditions and determine the regeneration status of the forest through the use of the Forestry Branch's GIS. Future developments will include the incorporation of all survey data and Manitoba forest industry depletion and renewal data. It is expected that TFM information will aid in forecasting the provincial wood supply and in sustainability monitoring.

URBAN FOREST INVENTORY SYSTEM

The Forestry Branch contracted the services of University of Winnipeg to create the Urban Forest Inventory System (UFIS) to allow DED program managers and cost sharing agreement communities to develop more effective disease management strategies. UFIS was implemented in 2003 and became fully operational in 2005.

UFIS can be adapted for surveys of other insects and diseases and could be used to manage any new invasive pests.

LOAD SLIP TRACKING SYSTEM

The province developed and implemented a computerized Load Slip Tracking System to replace a paper-based and primarily manual system. The new system records, manages and summarizes the entire life cycle of all load slips in a transparent manner (all primary forest products transported in Manitoba must be accompanied with a load slip). The system provides staff with accurate and easy to access data which is used to ensure records are properly completed and submitted.

DWARF MISTLETOE VOLUME LOSS SIMULATOR

The Forestry Branch uses a dwarf mistletoe loss simulator model to assist in determining appropriate management decisions based on the predicted volume losses. In 2001, the model's computer program was converted to a GIS format.

III – Increase Co-Management, Employment and Economic Development Opportunities for Aboriginal Communities

Even though Aboriginals comprise the largest cultural demographic in the boreal forest, they are under-represented in the forest economy. The Government of Manitoba, along with Aboriginal communities and the province's forest industry, is seeking ways to increase Aboriginal involvement in forestry developments.

The creation of the Sustainable Forestry Unit (SFU) in 2003, is one of the steps the province has taken to promote and develop Aboriginal forestry projects. It is the responsibility of the cross-departmental SFU to develop a sustainable and diversified strategy for Manitoba's forests. To achieve this, the department must focus on several areas, including Aboriginal forestry developments.

As a first step to increasing First Nations participation in Manitoba's forest sector, the SFU established a Federal/Provincial First Nations Forestry Working Group to strengthen communications among key provincial and federal departments. The Federal/Provincial Forestry Working Group also acts as a co-ordinating body to ensure that all participating government departments are consistent in their approach to supporting First Nations forestry initiatives.

The province continued to work with the Canadian Forest Service's First Nations Forestry Program to help develop forestry businesses and training programs for First Nations. Manitoba participated on the Provincial Management Committee of the First Nations Forestry Program, along with representatives from First Nations, industry and the Federal Government of Canada. Currently, the program provides $275,000 to Manitoba for First Nations forestry projects. Additional support is supplied from the province through sources like the Sustainable Development Innovations Fund.

Crown Consultation

It is critical that Aboriginal communities are involved in the management of Manitoba's forests – the land they use, live on and depend on. Aboriginal people represent the highest population base in forest communities. Their participation in the forest sector must include effective partnerships between Aboriginal communities and organizations, industry and governments.

Recent court decisions have clarified that governments have a duty to consult Aboriginal communities regarding activities that may infringe on treaty and Aboriginal rights to hunt, fish and trap. Consultation is being recognized as an opportunity for governments and Aboriginal people to build better relationships and to have an open dialogue on improving forest management.

THE SUSTAINABLE FORESTRY UNIT

The Sustainable Forestry Unit (SFU) was established in 2003, to promote economic development through the forest industry with a priority focus on economic diversification, increasing value added processing and Aboriginal participation. While the SFU is housed within Manitoba Conservation, it receives strategic direction and approvals from an inter-departmental steering committee.

One of the SFU's strategies for enhancing forest industry's access to technology transfer was to establish a Forintek presence in the province. Forintek Canada Corp. is a non-profit wood products research organization that delivers a Value to Wood program through a national network of industry advisors.

The SFU worked with Aboriginal organizations and industry to identify and develop joint economic development opportunities. This work included assisting the recent business partnership developed between Waugh's Woods and Swampy Cree Tribal Council and helping First Nations Forestry Limited Partnership (FNFLP) and Ainsworth Lumber Co. Ltd. build a business partnership around a hardwood-based development opportunity.

SCTC Grand Chief Easter and Honourable Minister of Conservation Stan Struthers

SWAMPY CREE TRIBAL COUNCIL

Based in part on the province's assessment of growth in the forest industry, Swampy Cree Tribal Council (SCTC) requested the opportunity to explore hardwood-based forestry developments in the province. A Memorandum of Understanding was signed between SCTC and the Government of Manitoba on August 3, 2005, in which Manitoba committed to only grant long-term hardwood tenure in northwestern Manitoba to a viable project involving SCTC as a partner.

SOUTHERN HARDWOOD DEVELOPMENT PROJECT

The First Nations Forestry Limited Partnership (FNFLP) is a business partnership of 14 First Nations dedicated to the sustainable development of timber and non-timber resources in its traditional lands through environmentally appropriate, culturally relevant, socially responsible and economically viable operations. FNFLP's primary focus over the last four years has been on the development of an engineered wood products facility and related harvesting operations in southern Manitoba with an acceptable industry partner.

In 2004, market opportunities and available wood supply in the Interlake and southeast part of the province created interest within the forest industry's engineered hardwood sector. Manitoba Conservation identified to FNFLP a window of opportunity to pursue a hardwood development with an established industry partner.

The province committed to work with FNFLP on the premise that an industry partner was essential to provide the expertise and resources to make a hardwood mill project a reality. In return, the province identified a major hardwood allocation for this project conditional upon significant First Nations participation, including equity participation in the mill, forest management, employment and training in all aspects of the operation and a role in decision-making.

Through a competitive bid process, Ainsworth Lumber Co. Ltd. was selected as the industry partner. Ainsworth Lumber Co. Ltd. is a publicly traded Canadian forest products company with operations in British Columbia, Alberta and Ontario and in the United States in Minnesota.

The proposed hardwood mill project will produce oriented strand board, a plywood replacement that has become a standard product in home and commercial building in recent years.

Currently, Ainsworth Lumber Company Ltd. and FNFLP are negotiating business partnership arrangements for the proposed engineered wood products facility and joint forest stewardship company options through a Collaborative Development Committee. To date, they have made substantial progress in identifying and addressing common interests and issues. Once operational, the mill and woodlands operations are expected to create up to 350 direct and 280 indirect jobs.

SFU facilitated field tour with FNFLP to explore forestry development opportunities.

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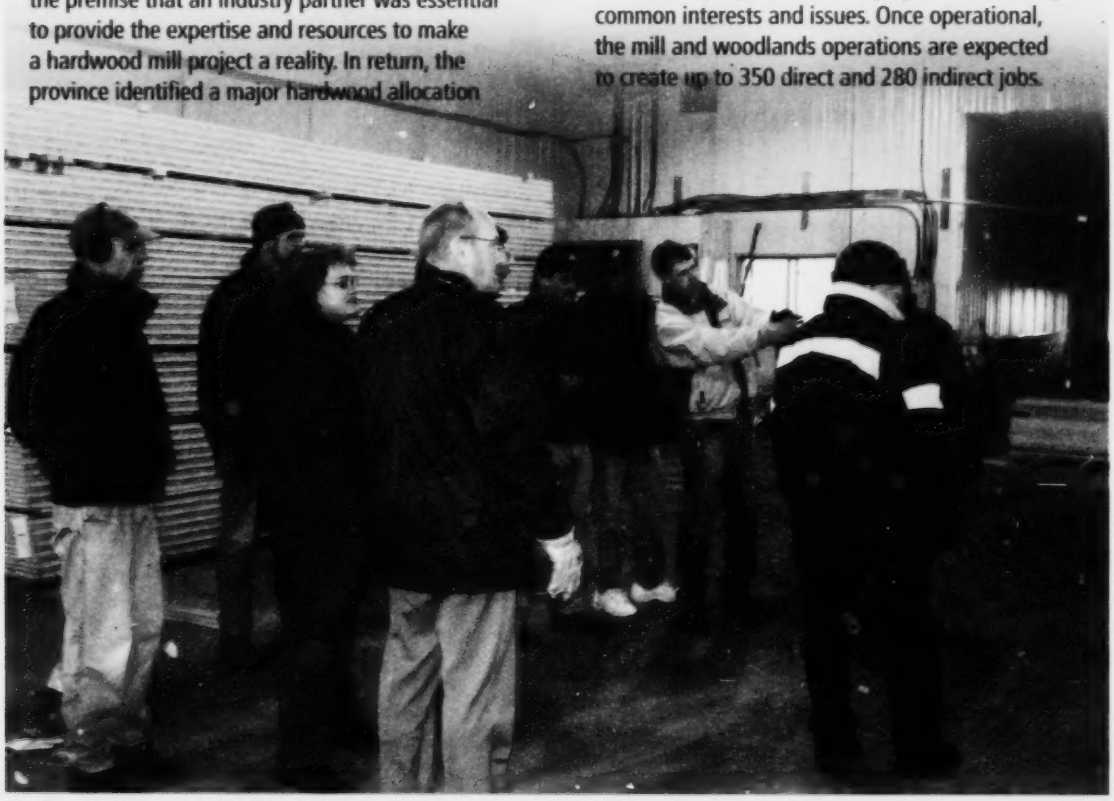


SFU facilitated field tour with FNFLP to explore forestry development opportunities.

FIRST NATIONS FORESTRY LIMITED PARTNERSHIP

Manitoba agreed to reserve the unallocated hardwoods in the Interlake and eastern region of the province for the First Nations Forestry Limited Partnership so they could explore development opportunities with an established industry partner.

MANITOBA – BROKENHEAD FIRST NATION VOLUME SAMPLING PARTNERSHIP

The Forestry Branch partnered with Indian and Northern Affairs Canada and Brokenhead First Nation to train several members in field sampling procedures and volume sampling in southeastern Manitoba in 2003/2004. Following the completion of this sampling, several of those involved have continued field work with forest industry.

WAUGH'S WOODS – SWAMPY CREE TRIBAL COUNCIL VOLUME SAMPLING PARTNERSHIP

In the fall of 2004, following discussions regarding a partnership in a field sampling program to assess timber volume, a Timber Volume Sampling contract was made between the Swampy Cree Tribal Council (SCTC), Manitoba Conservation and Waugh's Woods Ltd. The contract included training in standard forest measuring techniques and global positioning system technology.

SCTC personnel used these skills, along with infrastructure provided by Waugh's Woods Ltd., to sample 1,500 plots with a high degree of accuracy. Subsequent to this initiative, SCTC and Waugh's Woods started a business relationship that will help increase training and employment in forestry operations and lumber production.

NON-TIMBER FOREST PRODUCTS AND THE NORTHERN FOREST DIVERSIFICATION CENTRE

Economic benefits of the forest are often related to tree harvesting for lumber and pulp, but there are other development opportunities in forests that do not involve the harvesting of trees.

Using traditional and local knowledge, non-timber forest products could provide economic opportunities to Aboriginal communities in Manitoba's boreal forest. Unique products this resource can provide include traditional herbs, body care products, decorative items and food products, such as wild rice or mushrooms.

To help foster these opportunities in Manitoba's forest communities, the federal/provincial Economic Partners Agreement fund provided $400,000 annually for three years to the Northern Forest Diversification Centre (NFDC) in The Pas. During this reporting period, the Province of Manitoba participated on the NFDC Board of Directors.

The mission of the NFDC is to work with marginalized forest communities and individuals who are looking to develop economic opportunities that are aligned with local values and based on local resources, for the benefit of local people. The centre provides research, training, marketing and sales support for the non-timber forest products industry in Manitoba.

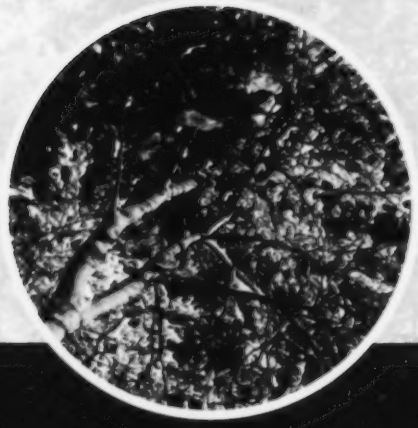
MANITOBA'S TIMBER VOLUME SAMPLING PARTNERSHIP

Manitoba Conservation is moving from conducting its own forestry surveys and other operational programs on Crown lands to contracting these services. This requires a rurally-based workforce that is qualified to take on operational activities, such as timber volume sampling, forest renewal surveys and tree planting in remote areas of Manitoba.

From November 2003 to March 2004, Manitoba Conservation, Brokenhead First Nation and Indian and Northern Affairs Canada created a partnership to conduct forestry surveys. Manitoba Conservation initiated a partnership to train and contract Brokenhead First Nations residents to conduct timber volume sampling in southeast Manitoba.

Fourteen Brokenhead community members received specialized training in forest measurement and surveying skills. From this group, the community selected a core of individuals to conduct volume sampling work for Manitoba Conservation's forest inventory program. The training and work experience gained by the trainees has prepared them to be successful in pursuing job opportunities with government, forest industry and consulting firms, including Manitoba Conservation's Eastern Region and Tembec Enterprises Inc. – Pine Falls Operation.

Employment opportunities for Brokenhead residents were created, and Manitoba Conservation improved forest inventory information to support wood supply analysis, resource allocation decisions and future land use discussions between different government departments.



IV – Promote a Sustainable Forest Economy

The Forestry Branch is committed to promoting a sustainable forest economy in Manitoba. This requires the co-ordination and exchange of information between the branch, industry, Aboriginal communities, stakeholders and the public.

During the reporting period, the forest sector in Manitoba experienced significant challenges as a result of the softwood lumber dispute, a strong Canadian dollar, rising fuel costs and fluctuating markets. Despite these obstacles, the forest industry continued to be a significant part of Manitoba's economy.

Forest Planning

Manitoba's forests are a valuable resource, and providing sustainable development opportunities and addressing the concerns and needs of all stakeholders is integral to the effective management and development of our forests. To ensure management activities are consistently applied across the province, Manitoba Conservation gives direction and approval to industry on planning, management and practices.

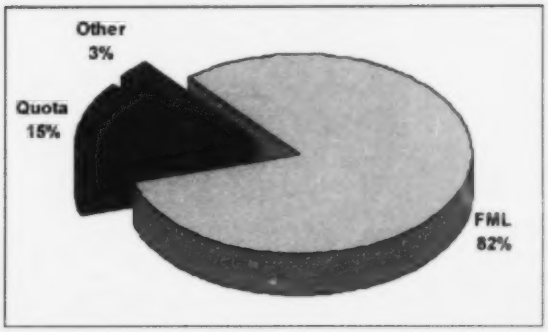
TIMBER CUTTING AUTHORITIES

Manitoba Conservation provides the opportunity to harvest timber from provincial Crown land through the allocation of timber harvesting rights. The majority of Crown timber in the province is allocated through long-term Forest Management Licence Agreements, multi-year Timber Sale Agreements and annual Timber Permits. In addition, Manitoba Conservation also offers unused or new timber allocations through public timber sale auctions. In 2001 and 2002, hardwood timber allocation and the southern area were removed from FML-2. A condition of these allocations was for the previous licensee to construct a bleached chemical thermal mechanical pulp mill which did not occur.

TIMBER QUOTA POLICY

Manitoba Conservation has developed a quota system to manage the majority of timber sales and timber permits issued for commercial use. This quota system is governed by the Timber Quota Policy, which gives each quota holder an annual volume for a five-year period. In 2005, the Timber Quota Policy was reviewed and updated. As of March 2006, there were 160 quota

Figure 1. Crown Timber Harvest by Authority Type



holders in Manitoba. Figure 1 illustrates the percentage of Crown timber harvested by quota holders (timber sales and permits), forest management licencees and other users (mainly non-quota timber permits (firewood).

MOUNTAIN QUOTA HOLDERS ASSOCIATION PLANNING

In 2001, the Mountain Quota Holders Association (MQHA) accepted the province's invitation to develop forestry operating plans for FMU 14 and a portion of FMU 12 that was previously included in FML-2. The MQHA developed a series of operating plans and acquired a Class 2 development licence under *The Environment Act* covering the period up to March 31, 2006.

In 2005, the province requested that the MQHA continue to develop operating plans until May 2009. The MQHA accepted the province's request and consequently *The Environment Act* license will be extended upon approval of the MQHA operating plans. The province expects to secure the long term management of these forest lands during the next reporting period.

THE EAST SIDE LAKE WINNIPEG PLANNING INITIATIVE/WABANONG NAKAYGUM OKIMAWIN

Manitoba Conservation, along with other departments, applied the principles outlined in the document *Consultation on Sustainable Development Implementation* (1999) to forest management in the East Side Lake Winnipeg Planning Initiative. The document provided recommendations, principles and guidelines for sustainable development and environmental protection in large area land use projects.

The East Side Lake Winnipeg Planning Initiative, renamed Wabanong Nakaygum Okimawin (WNO), is a pilot project that is bringing government, local communities, First Nations, environmental organizations and industry together to determine a broad area land-use plan for the east side of Lake Winnipeg. This will be accomplished through individual land use planning activities within the traditional territories of 16 First Nations. The plans will consider the cultural and spiritual values of the boreal forest, particularly to local and First Nations communities, the value of the forest in ecosystem functions and biodiversity, its role in carbon storage, the non-timber economic value of the forest, including ecotourism, medicines and trapping and sustainable forest harvesting activities.

A Memorandum of Understanding was signed in 2004, between the Province of Manitoba and thirteen First Nations in the area to ensure the participation of First Nations people in decisions affecting their communities and traditional territories. The three non-signatories still participated in the process by having representation on sub-committees and the WNO Council.

Maintaining a Current Forest Policy Framework

Forestry has the potential to be a major driver of Manitoba's rural economy by developing the local workforce and making efficient use of timber resources to produce primary and secondary forest products. Manitoba is committed to making this province's forest sector competitive on the global market through new policy development, optimization of fibre supply and direct involvement of Aboriginal people.

A provincial review was conducted on timber utilization standards and some adjustments were made to accommodate economic constraints on operations. The following are some examples.

- Upon request, Forest Management Licensees may be granted a measure of flexibility in how they harvest the sum of five years worth of Annual Allowable Cuts over a five-year period provided that the five-year Annual Allowable Cut is not exceeded. This flexibility allows for the salvage of large volumes of damaged timber, can reduce the number of years that harvesting activities occur in a sensitive area or improve the economics of harvest activities.
- In July 2001, a flexible utilization trial was established to evaluate the economic, environmental and social impacts of increasing the diameter at which tree tops must be used, from three to four inches. New guidelines relating to the application of treetop utilization standards are being evaluated.
- In November 2002, the Forestry Branch amended a policy of limbing fallen trees within harvest blocks and as close to the stump as possible. In March 2005, a new *Brush Disposal Forest Practices Guidebook* was developed to incorporate the Forest Practices Committee's recommendations and replace the former policy.

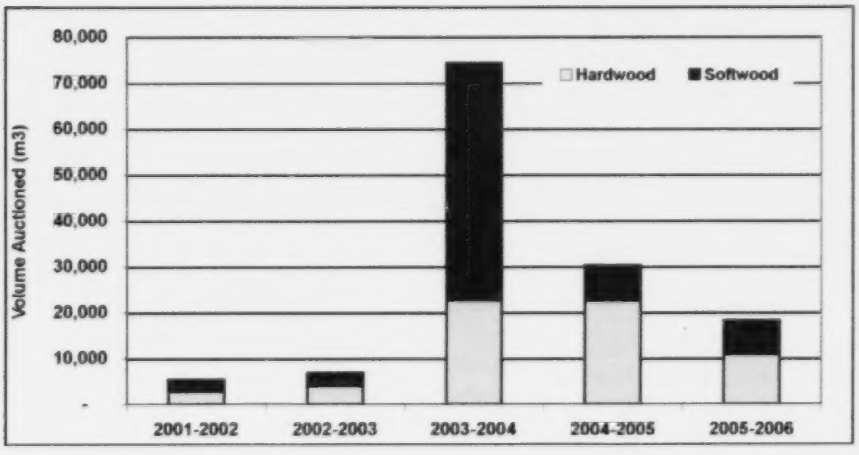
Timber Auctions and Salvage

Occasionally, circumstances arise that create new opportunities to access Crown timber. These circumstances include opportunities to salvage timber damaged by fires, wind and hail events or flooding or the opportunity to bid on unallocated timber that Manitoba Conservation wants harvested for forest management purposes.

NEW TIMBER AUCTION PROCESS

To increase the economic potential of Manitoba's forests, the province initiated a process of quarterly stumpage-based auctions in 2003. The primary goal of this initiative was to create opportunities for small businesses in the province and, at the same time, establish an open competitive market mechanism that is transparent in setting timber prices. In 2003, unique circumstances resulted in a significant volume of timber being auctioned (Figure 2). .

NEW TIMBER AUCTION PROCESS
Figure 2. Crown timber auctioned by year and species



DANCING POINT BLOWDOWN

Hundreds of hectares of over-mature softwood in the northern Interlake region of Manitoba were blown down during a violent thunderstorm with severe winds in July 2002. Manitoba's Interlake Region Forestry staff worked with representatives from Tembec Enterprises Inc. – Pine Falls Operation, Tolko Industries Ltd., First Nations Forestry Limited Partnership (including Peguis and Lake St. Martin First Nations) and local quota holders to develop a plan to salvage the estimated 25,000 m3 of softwood.

SANDILANDS BLOWDOWN SALVAGE

A violent windstorm on July 31, 2005, caused approximately 800 hectares of Crown forest jack pine to be blown down in the Sandilands Provincial Forest and in the community of Sandilands. The damaged timber had to be harvested quickly to eliminate the forest fire hazard and salvage the timber before it was rendered undesirable.

Trees blown down near Sandilands, Manitoba

As a result of co-operation between the Southeast Quota Holders and rural municipality representatives, Manitoba Conservation was able to develop and implement a salvage plan that resulted in approximately 120,000 m3 of jack pine being harvested in just over one year. The quota holder's co-operation in shifting their work from approved standing blocks to the difficult harvest of blowdown material resulted in efficient sustainable timber use and reduced the risk of fire and pest outbreaks. A fire-break was established around the town of Sandilands as part of the salvage operations.

Wood Measurement

An important part of ensuring the sustainability of our forest resources is the accurate measurement of the amount of timber harvested in the province. In Manitoba, revenue that is received from forest products harvested on provincial lands is determined by scaling. Scaling is the method of estimating the volume of wood harvested.

All Crown timber harvested in Manitoba must be accurately scaled by a scaler that is licensed by the Province of Manitoba. To get a licence, a scaler is required to pass a five-day training course provided by the department. Three training courses were held during this reporting period, and a total of 29 students graduated from the courses bringing the current number of licensed scalers in Manitoba to 468.

During the reporting period, mill check scaling was completed by department staff at all Forest Management License (FML) mill sites in Manitoba. In March 2006, the Forestry Branch requested that all timber operators complete an annual scaling plan for their operations.

TIMBER TRACKING

Tracking of all timber harvested and transported through the Load Slip Program is an important component of ensuring forest sustainability. *The Forest Act* requires timber cut from Crown lands be accompanied by a load slip. In 2005, the department implemented updated load slips, new procedures and a computerized intake system to improve the tracking of wood movement in Manitoba. New policies and procedures regarding the distribution, issuing and use of load slips were introduced.

Timber Administration

Manitoba Conservation is responsible for ensuring that appropriate dues are charged for the use of Crown resources. Setting and updating dues and tracking the timber harvested in the province are the responsibility of the Forestry Branch.

In 2002, forestry consultant Agfor Inc. was contracted by the Forestry Branch to review Manitoba's timber dues. The report indicated that the timber dues system should be revised to respond to market conditions and expanded to include more classes or commodities.

In 2003, the findings of the stumpage system review were presented to the Forest Industry Association of Manitoba (FIAM), and work continues on developing a new timber dues model for Manitoba.

TIMBER CLASSIFICATIONS

After conducting chipperwood trials, the Forestry Branch introduced a *Softwood Field Chip Timber Dues* circular that identified dues reductions for softwood chips produced in mobile chipping operations in 2003, to encourage the use of small diameter softwood and to reflect the lower value of this wood. The softwood field chip timber classification was revised and introduced province-wide in 2004.

A new oriented strand board hardwood timber classification was introduced in 2004. This new timber classification and the new timber dues rate associated with it were introduced to reflect the high value of hardwood timber that is used to produce oriented strand board.

Other minor changes in timber classifications and timber dues rates were introduced in 2004, to encourage the use of white birch and tamarack.

Utilization of small diameter wood for chipping in western Manitoba.

TIMBER HARVEST

The amount of Crown timber harvested increased slightly over the five year reporting period. Table 3 in the Appendices lists the Crown timber harvested annually by forest section.

REVENUE

Dues and charges are collected for each cubic metre of Crown timber that is harvested. Timber dues, sometimes referred to as stumpage, are the royalty collected by the province for the right to cut Crown timber.

In addition to dues, a Forest Renewal Charge (FRC) is collected to cover the costs of renewing an area following harvest. Forest Management License (FML) holders apply this charge on timber harvested in their FML areas and must ensure the areas harvested are properly renewed. The province collects a FRC in all other areas and completes renewal activities on behalf of the individuals with the timber cutting rights in these areas. A fire protection charge is also collected to offset the costs of fighting forest fires.

Forestry Industry Development

Manitoba's primary forest products industry includes lumber, oriented strand board and paper and directly employs 3,300 people. Manitoba's secondary forest products industry includes converted wood products (kitchen cabinets, windows and doors, manufactured housing, architectural millwork, remanufactured dimensional wood products) and furniture. Manitoba's converted wood products sector employs approximately 8,700 people. The Manitoba furniture industry employs approximately 4,300 people. The value of forest product exports from Manitoba based on 2005, figures is $732.5 million a year.

INDUSTRY CERTIFICATION

In 2002, Manitoba Conservation partnered with industry, the Canadian Forest Service and the Manitoba Model Forest to conduct a seminar in Winnipeg on the aspects of product certification. Third-party certification of wood products helps consumers ensure they are purchasing wood products from managed forests that meet certain standards of biodiversity, soil, water and ecosystem protection, while maintaining a balance of socio-economic benefits.

During the reporting period, the three major forest management license holders took steps to achieve certification of their products. Tolko Industries Ltd. received certification from the International Standardization Organization's environmental management standards in 2002, and in 2004, received certification from the Canadian Standards Association. Louisiana-Pacific Canada Ltd. received forest products certification from the Sustainable Forestry Initiative in 2003. Tembec Enterprises Inc. – Pine Falls Operation's products were certified in 2001, and Tembec initiated Forest Stewardship Certification by having a final audit completed in 2004. As of 2005, 10.6 million ha of forest area were certified in Manitoba.

FOREST ENGINEERING RESEARCH INSTITUTE OF CANADA (FERIC)

The Forest Engineering Research Institute of Canada (FERIC) is a non-profit research and development organization that seeks to improve Canadian forestry operations related to the harvesting and transportation of wood and the growing of trees within a framework of sustainable development. FERIC is funded by a partnership of leading forestry companies, the Government of Canada, provinces and territories. In October 2005, Manitoba joined FERIC recognizing the benefits to the province's forest sector, particularly in the areas of forest management, transportation and advancement of the private woodlot sector.

FORINTEK

Forintek Canada Corp. is a non-profit research organization involved in the wood products sector. Forintek and Natural Resources Canada have partnered to deliver a new technology transfer program called the Value to Wood program and a national network of industry advisors.

In 2004, Forintek established a secondary forest products industry advisor in Winnipeg and a primary industry advisor in The Pas, with funding assistance from the Canada and Manitoba Economic Partnership Agreement. The network of Forintek Industry Advisors has assisted large and small companies in Manitoba's wood using industry. Since arriving in Manitoba, Forintek has expanded into First Nations forestry.

WOODLOT PROGRAMS

The Forestry Branch supported the operation of the Manitoba Forestry Association (MFA) Woodlot Program through an annual grant of $130,000. Until 2004/05, Manitoba Conservation also supported an Agro-Woodlot Program through the Manitoba Heritage Habitat Corporation with $312,000 of annual funding and by providing the services of a provincial forester.

After 2004, the province continued to support the MFA through an annual Sustainable Development Innovations Fund of $200,000. This program provides economic diversification for the farming community by encouraging the management of woodlots for timber production, land management, habitat and non-timber products, such as maple syrup. The Agro-Woodlot Program was transferred to Manitoba Agriculture, Food and Rural Initiatives in 2005.

Manitoba's Forest Industry

TEMBEC ENTERPRISES INC. – PINE FALLS OPERATION – FML-1

Tembec Enterprises Inc. – Pine Falls Operation has been operating in Manitoba since 1926, and produces newsprint for major newspapers in Canada and the United States. Tembec Enterprises Inc. is Manitoba's only newsprint mill and is the largest recycler of newspapers and magazines in the province.

In 2001, a thermal mechanical pulp mill was brought on-line which improved the quality of the newsprint, reduced operating costs and improved the environmental performance of the mill. The mill reduced coal consumption which resulted in a decrease in greenhouse gas emissions 40 to 50 per cent below 1990 levels.

Tembec Enterprises Inc. also involved local First Nation communities in developing improved methods for addressing First Nation's values and priorities in forest planning and operations. Traditional Area Advisory Committees were established by First Nations in the east side of Lake Winnipeg. The committees encourage the exchange of information between First Nations, industry and government regarding the traditional values of the forests and the traditional knowledge of the forests held by local and Aboriginal communities.

TOLKO INDUSTRIES LTD. – MANITOBA – FML-2

Tolko Industries Ltd.'s operations in Manitoba include solid wood and kraft paper divisions. The solid wood division produces lumber for the North American market. The kraft paper division produces unbleached kraft paper which is marketed in North America, Europe, the Middle East and Latin America.

In 2003, Tolko Industries Ltd. entered into a four-year arrangement with the Chemawawin Cree First Nation to harvest timber in the northern part of the Interlake Forest Section, which was formerly part of the FML-2.

Tolko Industries Ltd.'s Forest Resource Advisory Committee (FRAC) is a forum where representatives from across the FML area can share views and concerns about forest management activities. Two new FRAC's were established in Snow Lake and Sherridon in 2003, to improve public involvement in company operations near each of these communities.

During the reporting period, the company participated in a permanent growth and yield program, supported development of a Manitoba eco-site based decision support system, a Manitoba predictive model to protect areas of archaeological significance and woodland caribou research work on the Naosap herd. In 2003, Tolko Industries Ltd. celebrated the planting of their 100 millionth seedling in Manitoba.

LOUISIANA-PACIFIC CANADA LTD. – SWAN VALLEY FOREST RESOURCES DIVISION – FML-3

Louisiana-Pacific Canada Ltd. in Swan Valley began operating in 1996, producing oriented strand board, primarily by using trembling aspen.

Louisiana-Pacific Canada Ltd.'s 10-year Forest Management Plan expired in 2005, and a new 20-year plan is being developed. Louisiana-Pacific Canada Ltd. held public consultations regarding annual operating plans and their long-term management plan. Crown consultation with First Nations and Aboriginal communities was

initiated by Manitoba Conservation in March 2006, regarding Louisiana-Pacific Canada Ltd.'s proposed Forest Management Plan.

Louisiana-Pacific Canada Ltd. has partnered with many provincial and national groups, including the Sustainable Forest Network, Manitoba Model Forest, Ducks Unlimited Canada Western Boreal Program, the Forest Engineering Research Institute of Canada, the Prairie Adaptation Research Centre and the Centre for Forest Interdisciplinary Research at the University of Winnipeg.

TetrES Consultants were contracted by Louisiana-Pacific Canada Ltd. to conduct a sustainability analysis on Louisiana-Pacific Canada Ltd.'s operations from 1996-2002. TetrES completed the report in 2003, and it showed that more than 90 per cent of the sustainability requirements were accomplished.

SPRUCE PRODUCTS LTD.

Spruce Products Ltd. (SPL) has operated sawmills and pulpwood operations throughout Manitoba since 1942. In the five year reporting period, SPL invested over 10 million dollars in capital projects, including completely rebuilding the planer mill, installing an optimizer trimmer in the sawmill and installing an optimized linear scanning board edger in the sawmill.

In 2001, Spruce Products Ltd. expanded its operations with the addition of an animal bedding chip plant and a second dry kiln facility. The animal bedding chip plant makes efficient use of wood shavings. The expanded dry kiln capacity allows SPL to operate the sawmill year-round and to expand market opportunities. SPL employs 70 full-time employees and approximately 150 people through contract operations.

The Spruce Products Ltd. sawmill in Swan River was recognized by Manitoba Hydro with a 2002 Sustainable Development Award in the business category for improving the recovery of lumber from logs and helping to build the economy through innovative technology.

WAUGH'S WOODS

Waugh's Woods operates a sawmill in The Pas and conducts forestry surveys throughout Manitoba. Thirteen people are employed year-round at the sawmill, while 18 people are employed seasonally performing forestry surveys. Previously, the sawmill produced standard 2x4 and 2x6 lumber, but operations now focus on producing specialty timbers.

In November 2005, the Swampy Cree Tribal Council became partners in Waugh's Woods to increase training and employment opportunities.

GRANT KURIAN TRUCKING

Grant Kurian Trucking operates in south and central Manitoba on Crown and private forest lands. Softwood and hardwood timber is harvested, processed and delivered in chip form to mills in Manitoba and Ontario. In 2005, operations were divided into two companies – SEER Logging and Grant Kurian Trucking Ltd.

V – Update and Improve Legislation and Guidelines

To keep pace with new issues and a changing forest sector, the province continues to update legislation and guidelines that protect forest resources and values in Manitoba. The Province of Manitoba ensures the appropriate programs are in place to administer to the needs of the forest and forest sector.

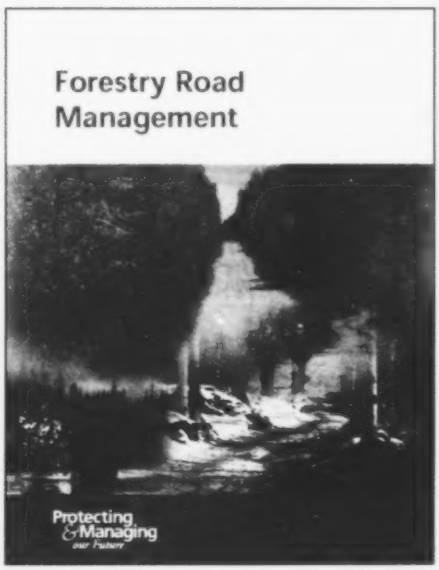
FOREST PRACTICES INITIATIVE

The Forestry Branch is producing a series of Forest Practices Guidebooks through the Forest Practices Initiative (FPI). The FPI was created to provide consistent operational direction for resource managers, timber operators, natural resource officers and auditors.

Input from several different branches of Manitoba Conservation (Forestry, Wildlife and Ecosystem Protection, Parks and Natural Areas, Environmental Approvals, Regional Operations), Manitoba Water Stewardship, the three FML holders in the province (Tembec Enterprises Inc., Louisiana-Pacific Canada Ltd. and Tolko Industries Ltd.) and the Forest Industry Association of Manitoba (representing timber quota holders) were included in the development of the guidelines.

Each guidebook contains pertinent references to science, legislation, policy, agreements and licenses. Recommendations for the planning, implementation, monitoring and enforcement of the forest practices are also included in the guidebooks.

Guidebooks on Preharvest Surveys and Protection of Softwood Understorey in Mixedwood and Hardwood Forests were published in 2003. Forest Roads and Brush Disposal guidebooks were published in 2005.



UPDATING LEGISLATION

In 2002, the Manitoba Forestry Branch began a review of *The Forest Act* and Regulations. Changes to the act and regulations were identified that would support and accommodate improvements to Manitoba's timber administration system. Inadequacies in the current penalties and enforcement sections were also identified.

An external review of other province's statutes was also undertaken and completed in the fall of 2004. The review highlighted several areas where improvements could be made to Manitoba's *The Forest Act* that would bring the province in line with other provincial jurisdictions.

In 2005, the branch began the formal process of making the required changes to the act. This would be the first major update of Manitoba's *The Forest Act* in over 40 years.

The creation of a new act or amendments to the existing *The Dutch Elm Disease Act* is also being explored by the Forestry Branch to protect Manitoba's forests from invasive pests. Work will continue in this area during the next reporting period.

SOFTWOOD LUMBER DISPUTE

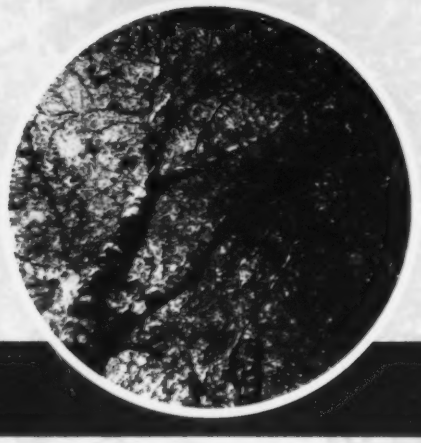
The softwood lumber trade dispute between Canada and the United States (U.S.) has caused hardship for this country's lumber producers since May of 2001, when the U.S. imposed countervailing and anti-dumping duties on Canadian softwood lumber.

Canada has been accused of unfairly subsidizing its softwood lumber producers under the assumption that stumpage fees paid for timber on Crown land are too low. The majority of commercial operations in Canada, including Manitoba, use Crown land and therefore have been subjected to the duties imposed by the United States.

Escalating since the 1980's, the dispute intensified again in 2001, when a previous softwood lumber agreement between Canada and the U.S. expired. Throughout this time, Canada negotiated with the U.S. and won appeals under the North American Free Trade Agreement and the World Trade Organization. Despite this, Canadian companies continued to pay duties. Several Manitoba companies were affected by the trade dispute.

The Forestry Branch worked with Manitoba Industry, Trade and Mines to represent Manitoba in countervail investigations on softwood imports and administrative reviews initiated by the U.S. Department of Commerce. The branch also worked with Manitoba Industry, Trade and Mines to represent Manitoba in bi-lateral discussions with other provinces and the Government of Canada and in negotiations with the U.S.

As of March 2006, Canadian industry was still paying dues, but a negotiated settlement between Canada and the United States was anticipated to come into effect in 2006.



Conclusion

When people think of Manitoba, many think of open fields and prairies, but this represents only a small portion of Manitoba's land base. Manitoba is home to vast boreal forests and its prairie region contains unique pockets of deciduous forest, treed riparian zones, beautiful urban forests and shelterbelts that dot rural areas.

Important environmental and social benefits are derived from forests. Manitobans also receive economic benefits from the province's forests through forest industry development, non-timber forest products and tourism.

Over the past five years, Manitoba Conservation and the Forestry Branch pursued a new vision for Manitoba's forests as outlined in the Next Steps report. A diverse range of values associated with the forest requires a diversified and adaptable approach to forest management. The Province of Manitoba and the Forestry Branch will continue to evolve to serve the needs of the province's forests and the people of Manitoba.

Website Addresses

- Ducks Unlimited Pasquia Project (www.ducks.ca/conserve/programs/boreal/pasquia.html)
- Manitoba Land Initiative (https://web2.gov.mb.ca/mli/)
- National Forest Inventory System (http://nfis.org)
- Wood Supply in Canada (National Forest Database Program) (http://nfdp.ccfm.org/compendium/harvest/2005_e.php)
- Model Forest Network (http://www.modelforest.net/)
- Manitoba Model Forest (www.manitobamodelforest.net/)
- Sustainable Forest Management Network (www.sfmnetwork.ca/)
- Canadian Council of Forest Ministers (www.ccfm.org/)
- Natural Resources Canada, Canadian Forest Service (http://cfs.nrcan.gc.ca/)
- Canadian Food Inspection Agency (www.inspection.gc.ca/)
- Manitoba Conservation (www.gov.mb.ca/conservation/)
- Manitoba Conservation, Forestry Branch (www.gov.mb.ca/conservation/forestry/index.html)
- Protected Areas Initiative (www.gov.mb.ca/conservation/pai/)
- Manitoba Habitat Heritage Corporation (www.mhhc.mb.ca/)
- Manitoba Forestry Association (www.mbforestryassoc.ca/)
- Northern Forest Diversification Centre (www.nfdc.ca/)

Appendices

Table 3. Crown Timber Volume Harvested Annually by Forest Section (m3)

FOREST SECTION	2001-2002		2002-2003		2003-2004		2004-2005		2005-2006		AVERAGE	
	SOFTWOOD	HARDWOOD	SOFTWOOD	HARDWOOD	SOFTWOOD	HARDWOOD	SOFTWOOD	HARDWOOD	SOFTWOOD	HARDWOOD	SOFTWOOD	HARDWOOD
Aspen Parkland	660	1,379	617	1,775	842	1,388	565	1,217	807	1,484	698	1,449
Mountain	309,639	616,934	257,514	602,115	279,439	621,735	297,548	627,058	338,866	551,686	293,601	603,906
Pineland	133,265	71,197	127,089	73,598	131,054	80,127	165,471	89,853	159,737	90,332	143,323	81,021
Lake Winnipeg East	146,989	16,637	142,181	13,942	186,919	34,547	204,222	20,696	255,656	30,527	187,194	23,370
Interlake	32,403	15,148	26,282	16,368	56,891	17,462	119,588	18,169	82,078	17,694	63,448	16,968
Saskatchewan River	181,801	5,311	263,707	4,199	288,658	9,963	329,141	643	382,756	4,435	289,213	4,910
Highrock	184,788	384	187,832	208	238,039	240	194,156	245	200,656	1,085	201,094	432
Nelson River	375,041	3,991	385,125	1,338	382,211	579	376,083	9,806	328,393	27,721	369,371	8,687
Hayes River	333	–	250	–	149	–	318	–	456	25	301	5
Total	1,364,917	730,981	1,390,597	713,542	1,564,202	766,041	1,687,092	767,686	1,749,405	724,989	1,551,243	740,648

Table 4. Forest Zone Area Summary by Forest Section All Status and Ownerships – 2005 (in hectares)

FOREST SECTION	YEARS OF PHOTOGRAPHY	PRODUCTIVE FOREST	FORESTED NON PRODUCTIVE	NON FORESTED	TOTAL LAND	WATER	TOTAL	PERCENT OF TOTAL AREA
Aspen Parkland	'79,'80,'81	735,256.7	143,765.8	5,480,172.1	6,359,194.6	105,732.8	6,464,927.4	16.3%
Mountain*	'80,81,'98,'00,'01	**1,480,460.5**	**429,290.2**	**1,345,213.6**	**3,254,964.3**	**708,775.9**	**3,963,740.2**	**10.0%**
Pineland *	1996	**571,133.9**	**271,826.9**	**251,388.8**	**1,094,349.6**	**112,462.7**	**1,206,812.3**	**3.0%**
Lake Winnipeg East*	'84,'85,'86,'96,'97	**1,949,417.0**	**1,137,318.5**	**325,442.2**	**3,412,177.7**	**763,447.3**	**4,175,625.0**	**10.5%**
Interlake	'92,'93,'96	1,274,126.3	771,613.7	1,014,443.8	3,060,183.8	246,561.7	3,306,745.5	8.3%
Saskatchewan River	'95,'96	773,695.3	876,221.8	373,899.5	2,023,816.6	616,175.9	2,639,992.5	6.7%
Highrock	'82,'83,'87,'88	1,864,139.0	1,086,911.0	194,068.4	3,145,118.4	526,515.8	3,671,634.2	9.2%
Churchill River	'69 &'75	1,667,996.2	754,303.5	76,557.3	2,498,857.0	599,400.4	3,098,257.4	7.8%
Nelson River	'86, 90,'91	1,534,043.7	2,026,736.8	336,674.9	3,897,455.4	601,855.0	4,499,310.4	11.3%
Hayes River	'66,'73	2,368,632.5	2,964,798.7	219,847.7	5,553,278.9	1,117,457.3	6,670,736.2	16.8%
Total		**14,218,901.1**	**10,462,786.9**	**9,617,708.3**	**34,299,396.3**	**5,398,384.8**	**39,697,781.1**	
As a Percent of Total Area		35.8%	26.4%	24.2%		13.6%		100.0%

NOTE:Forest Sections denoted with the * include all water bodies within the forest section limit.
All other forest sections do not include Lake Manitoba, Lake Winnipeg or Lake Winnipegosis

Table 5. 2001 to 2005 Silviculture Activities

YEAR	01\02					02\03					3\04					04\05					05\06					5 YEAR TOTALS				
Agency	MC	Tembec	TOLKO	L P	Total	MC	Tembec	TOLKO	L P	Total	MC	Tembec	TOLKO	L P	Total	MC	Tembec	TOLKO	L P	Total	MC	Tembec	TOLKO	L P	Total	MC	Tembec	TOLKO	L P	Total
Activity																														
Site Preparation	Hectares Treated																													
Mechanical	853.5	382.0	3585.0	197.7	5018.2	742.5	375.0	4352.0	99.7	5569.2	1258.7	73.0	3683.0	409.0	5423.7	901.9	68.0	753.0	49.6	1772.5	1455.6	254.2	831.0	118.0	2658.8	5212.2	1152.2	13204.0	874.0	20442.4
Chemical-Mechanical	0.0	0.0	0.0	0.0	0.0	168.4	0.0	0.0	0.0	168.4	102.1	160.0	0.0	0.0	262.1	129.3	134.0	0.0	0.0	263.3	0.0	0.0	0.0	0.0	0.0	399.8	294.0	0.0	0.0	693.8
Total	**853.5**	**382.0**	**3585.0**	**197.7**	**5018.2**	**910.9**	**375.0**	**4352.0**	**99.7**	**5737.6**	**1360.8**	**233.0**	**3683.0**	**409.0**	**5685.8**	**1031.2**	**202.0**	**753.0**	**49.6**	**2035.8**	**1455.6**	**254.2**	**831.0**	**118.0**	**2658.8**	**5612.0**	**1446.2**	**13204.0**	**874.0**	**21136.2**
Renewal Treatments	Hectares Treated																													
Scarification for Natural	276.1	106.0	1044.0	346.6	1772.7	321.9	67.0	1210.0	170.5	1769.4	490.4	97.0	1658.0	0.0	2245.4	272.7	104.0	210.0	43.7	630.4	320.4	254.0	2415.0	0.0	2989.4	1681.5	628.0	6537.0	560.8	9407.3
Seeding	670.4	286.0	0.0	0.0	956.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	670.4	286.0	0.0	0.0	956.4
Plantation Establishment	1563.2	713.0	4792.0	1751.5	8819.7	1423.0	665.0	4455.0	1637.1	8180.1	1259.5	940.0	4544.0	1150.0	7893.5	1479.3	672.0	3473.0	1242.1	6866.4	1674.7	659.0	4938.0	1173.0	8444.7	7399.7	3649.0	22202.0	6953.7	40204.4
Total	**2509.7**	**1105.0**	**5836.0**	**2098.1**	**11548.8**	**1744.9**	**732.0**	**5665.0**	**1807.6**	**9949.5**	**1749.9**	**1037.0**	**6202.0**	**1150.0**	**10138.9**	**1752.0**	**776.0**	**3683.0**	**1285.8**	**7496.8**	**1995.1**	**913.0**	**7353.0**	**1173.0**	**11434.1**	**9751.6**	**4563.0**	**28739.0**	**7514.5**	**50568.1**
Renewal Retreatments	Hectares Treated																													
Plantation Refill	192.0	0.0	0.0	0.0	192.0	34.5	0.0	120.0	0.0	154.5	74.9	48.0	60.0	0.0	182.9	129.3	0.0	0.0	0.0	129.3	6.0	35.6	0.0	0.0	41.6	436.7	83.6	180.0	0.0	700.3
Planted Number of Trees ('000's)	1450.0	7000.0	2108.4	13074.3	2645.4	1258.7	7497.0	2040.5	13441.6	3165.7	1160.4	6253.0	2412.2	12991.3	3343.7	1086.3	7900.0	1935.1	14265.1	14854.7	6533.8	36754.4	11298.5	69441.4						
Plantation Refill	354.0	0.0	0.0	0.0	354.0	65.7	0.0	127.0	0.0	192.7	142.7	54.0	30.0	0.0	226.7	154.1	0.0	0.0	0.0	154.1	8.3	83.5	0.0	0.0	91.8	724.8	137.5	157.0	0.0	1019.3
Total	**3538.0**	**1578.4**	**8104.4**	**2802.3**	**16023.1**	**2581.6**	**1450.0**	**7127.0**	**2108.4**	**13267.0**	**2788.1**	**1312.7**	**7527.0**	**2040.5**	**13668.3**	**3319.8**	**1160.4**	**6253.0**	**2412.2**	**13145.4**	**3352.0**	**1169.8**	**7900.0**	**1935.1**	**14356.9**	**15579.5**	**6671.3**	**36911.4**	**11298.5**	**70460.7**
Tending	Hectares Treated																													
Aerial Spraying	527.2	0.0	1368.0	0.0	1895.2	0.0	0.0	0.0	0.0	0.0	31.4	0.0	864.0	0.0	895.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1700.0	0.0	1700.0	558.6	0.0	3932.0	0.0	4490.6
Ground Spraying	150.4	110.0	0.0	132.3	392.7	87.4	87.0	0.0	0.0	174.4	194.4	20.0	0.0	0.0	214.4	122.0	176.0	0.0	0.0	298.0	0.0	345.0	0.0	0.0	345.0	554.2	738.0	0.0	132.3	1424.5
Manual	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	70.4	0.0	0.0	0.0	70.4	49.4	0.0	0.0	0.0	49.4	10.2	0.0	0.0	0.0	10.2	130.0	0.0	0.0	0.0	130
PreCommercial Thinning	0.0	0.0	25.0	0.0	25.0	5.3	0.0	0.0	0.0	5.3	0.0	0.0	0.0	0.0	0.0	30.0	0.0	0.0	0.0	30.0	0.0	0.0	0.0	0.0	0.0	35.3	0.0	25.0	0.0	60.3
Fertilization	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
Total	**677.6**	**110.0**	**1393.0**	**132.3**	**2312.9**	**92.7**	**87.0**	**0.0**	**0.0**	**179.7**	**296.2**	**20.0**	**864.0**	**0.0**	**1180.2**	**201.4**	**176.0**	**0.0**	**0.0**	**377.4**	**10.2**	**345.0**	**1700.0**	**0.0**	**2055.2**	**1278.1**	**738.0**	**3957.0**	**132.3**	**6105.4**
Silviculture Surveys	Hectares Surveyed																													
Regeneration Surveys	3713.8	370.0	5529.1	1291.7	10904.6	4466.1	3944.1	1699.3	1626.0	11735.5	2721.5	1858.5	0.0	2046.3	6626.3	2599.9	1710.3	5986.0	4946.3	15242.5	2850.0	1231.5	7881.1	2867.8	14830.4	16351.3	9114.4	21095.5	12778.1	59339.3
Free To Grow Surveys	2769.7	2136.1	0.0	0.0	4905.8	2849.8	2212.8	0.0	0.0	5062.6	3356.4	1514.9	3913.1	0.0	8784.4	3600.5	2696.2	3682.0	0.0	9978.7	3058.2	1763.0	1365.8	0.0	6187.0	15634.6	10323.0	8960.9	0.0	34918.5
Total	**6483.5**	**2506.1**	**5529.1**	**1291.7**	**15810.4**	**7315.9**	**6156.9**	**1699.3**	**1626.0**	**16798.1**	**6077.9**	**3373.4**	**3913.1**	**2046.3**	**15410.7**	**6200.4**	**4406.5**	**9668.0**	**4946.3**	**25221.2**	**5908.2**	**2994.5**	**9246.9**	**2867.8**	**21017.4**	**31985.9**	**19437.4**	**30056.4**	**12778.1**	**94257.8**

Table 5: 2001 to 2005 Silviculture Activities

YEAR	01\02					02\03					3\04					04\05					05\06					5 YEAR TOTALS				
Agency	MC	Tembec	TOLKO	L-P	Total	MC	Tembec	TOLKO	L-P	Total	MC	Tembec	TOLKO	L-P	Total	MC	Tembec	TOLKO	L-P	Total	MC	Tembec	TOLKO	L-P	Total	MC	Tembec	TOLKO	L-P	Total
Activity																														
Site Preparation															Hectares Treated															
Mechanical	853.5	382.0	3585.0	197.7	5018.2	742.5	375.0	4352.0	99.7	5569.2	1258.7	73.0	3683.0	409.0	5423.7	901.9	68.0	753.0	49.6	1772.5	1455.6	254.2	831.0	118.0	2658.8	5212.2	1152.2	13204.0	874.0	20442.4
Chemical-Mechanical	0.0	0.0	0.0	0.0	0.0	168.4	0.0	0.0	0.0	168.4	102.1	160.0	0.0	0.0	262.1	129.3	134.0	0.0	0.0	263.3	0.0	0.0	0.0	0.0	0.0	399.8	294.0	0.0	0.0	693.5
Total	853.5	382.0	3585.0	197.7	5018.2	910.9	375.0	4352.0	99.7	5737.6	1360.8	233.0	3683.0	409.0	5685.8	1031.2	202.0	753.0	49.6	2035.8	1455.6	254.2	831.0	118.0	2658.8	5612.0	1446.2	13204.0	874.0	21136.2
Renewal Treatments															Hectares Treated															
Scarification for Natural	276.1	106.0	1044.0	346.6	1772.7	321.9	67.0	1210.0	170.5	1769.4	496.4	97.0	1658.0	0.0	2245.4	272.7	104.0	215.0	43.7	630.4	320.4	254.0	2315.0	0.0	2989.5	1691.5	628.0	6537.0	560.8	9417.3
Seeding	670.4	286.0	0.0	0.0	956.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	670.4	286.0	0.0	0.0	956.4
Plantation Establishment	1563.2	713.0	4752.0	1751.5	8819.7	1423.0	665.0	4355.0	1637.1	8180.1	1259.5	940.0	4544.0	1150.0	7893.5	1479.3	672.0	3473.0	1,421	6866.4	1674.7	659.0	4498.0	1173.0	8444.7	7399.3	3649.0	22262.0	6953.7	40264.4
Total	2509.7	1105.0	5836.0	2098.1	11548.8	1744.9	732.0	5665.0	1807.6	9949.5	1749.9	1037.0	6202.0	1150.0	10138.9	1752.0	776.0	3683.0	1285.8	7496.8	1995.1	913.0	7353.0	1173.0	11434.1	9751.6	4563.0	28739.0	7514.5	50568.1
Renewal Retreatments															Hectares Treated															
Plantation Refill	192.0	0.0	0.0	0.0	192.0	34.5	0.0	120.0	0.0	154.5	74.9	48.0	60.0	0.0	182.9	129.3	0.0	0.0	0.0	129.3	6.0	35.6	0.0	0.0	41.6	436.7	83.6	180.0	0.0	700.3
Planted Number of Trees ('000's)	1450.0	700.0	2108.4	13074.3	2645.4	1258.7	7497.0	2640.5	13441.6	4165.7	1160.4	675.0	2412.2	17991.3	3843.7	1086.3	790.0	1935.1	14269.1	14854.7	6533.8	367544	11298.5	69331.4						
Plantation Refill	354.0	0.0	0.0	0.0	354.0	65.7	0.0	127.0	0.0	192.7	142.7	54.0	30.0	0.0	226.7	154.1	0.0	0.0	0.0	154.1	8.3	83.5	0.0	0.0	91.8	724.8	137.5	157.0	0.0	1019.3
Total	3538.0	1578.4	8104.4	2802.3	16023.1	2581.6	1450.0	7127.0	2108.4	13267.0	2788.1	1312.7	7527.0	2040.5	13668.3	3319.8	1160.4	6253.0	2412.2	13145.4	3352.0	1169.8	7900.0	1935.1	14356.9	15579.5	6671.3	36911.4	11298.5	70460.7
Tending															Hectares Treated															
Aerial Spraying	527.2	0.0	1368.0	0.0	1895.2	0.0	0.0	0.0	0.0	0.0	31.4	0.0	864.0	0.0	895.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1700.0	0.0	1700.0	558.6	0.0	3932.0	0.0	4490.6
Ground Spraying	150.4	110.0	0.0	132.3	392.7	87.4	87.0	0.0	0.0	174.4	193.4	20.0	0.0	0.0	213.4	122.0	176.0	0.0	0.0	298.0	0.0	345.0	0.0	0.0	345.0	554.2	738.0	0.0	132.3	1424.5
Manual	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	70.4	0.0	0.0	0.0	70.4	49.4	0.0	0.0	0.0	49.4	10.2	0.0	0.0	0.0	10.2	130.0	0.0	0.0	0.0	130
PreCommercial Thinning	0.0	0.0	25.0	0.0	25.0	5.3	0.0	0.0	0.0	5.3	0.0	0.0	0.0	0.0	0.0	30.0	0.0	0.0	0.0	30.0	0.0	0.0	0.0	0.0	0.0	35.3	0.0	25.0	0.0	60.3
Fertilization	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
Total	677.6	110.0	1393.0	132.3	2312.9	92.7	87.0	0.0	0.0	179.7	296.2	20.0	864.0	0.0	1180.2	201.4	176.0	0.0	0.0	377.4	10.2	345.0	1700.0	0.0	2055.2	1278.1	738.0	3957.0	132.3	6105.4
Silviculture Surveys															Hectares Surveyed															
Regeneration Surveys	3713.8	370.0	5529.1	1291.7	10904.6	4466.1	3944.1	1699.3	1626.0	11735.5	2721.5	1858.5	0.0	2046.3	6626.3	2599.9	1710.3	5386.0	4406.3	15242.5	2850.0	1231.5	7881.1	2667.8	14630.4	16351.3	9114.4	21096.5	12778.1	59339.3
Free To Grow Surveys	2769.7	2136.1	0.0	0.0	4905.8	2849.8	2212.8	0.0	0.0	5062.6	3356.4	1514.9	3913.1	0.0	8784.4	3600.5	2699.2	3662.0	0.0	9961.7	3058.2	1763.0	1365.8	0.0	6187.0	15634.6	10227.5	8940.9	0.0	34918.5
Total	6483.5	2506.1	5529.1	1291.7	15810.4	7315.9	6156.9	1699.3	1626.0	16798.1	6077.9	3373.4	3913.1	2046.3	15410.7	6200.4	4406.5	9668.0	4946.3	25221.2	5908.2	2994.5	9246.9	2667.8	21017.4	31985.9	19437.4	30036.4	12778.1	94257.8

FML # 1– Tembec Enterprises Inc.
Harvest Control (m3)
January 1, 1999 – September 31, 2003

FML	FMU	OPERATING LEVEL	"AAC YR 1 (1999)"	"AAC YR 2 (2000)"	"AAC YR 3 (2001)"	"AAC YR 4 (2002)"	"AAC YR 5 (2003)"	1 1/2 X AAC YR 1	5 X AAC	OPENING BALANCE	YR 1 HARVEST (1999)	YR 2 HARVEST (2000)	YR 3 HARVEST (2001)	YR 4 HARVEST (2002)	YR 5 HARVEST (2003)	YTD CUT	BALANCE
Tembec	31 & 35	2	276,760	276,760	276,760	348,334	348,334	415,140	1,526,948	0	151,026	172,456	144,542	108,661	126,506	703,191	823,757

FML # 2 – Tolko Industries Ltd.
Harvest Control (m3)
January 1, 1999 – May 31, 2005

FOREST SECTION	FMU	OPERATING LEVEL	AAC YR 1 (1999)	AAC YR 2 (2000)	AAC YR 3 (2001)	AAC YR 4 (2002)	AAC YR 5 (2003)	AAC YR 6.42 (TO MAY 2005)	6.42 X AAC	OPENING BALANCE	YR 1 HARVEST (1999)	YR 2 HARVEST (2000)	YR 3 HARVEST (2001)	YR 4 HARVEST (2002)	YR 5 HARVEST (2003)	YR 6.42 HARVEST (TO MAY 2005)	YTD CUT	BALANCE
Mountain	12	3	82,700	82,700	82,700	82,700	10,710	15,173	356,683	0	33,935	13,840	51,250	57,333	11,955	23,645	191,958	164,725
	14	3	124,050	124,050	124,050	124,050	0	0	496,200	0	110,175	123,290	89,273	42,875			365,613	130,587
Interlake	45	1	57,600	57,600	57,600	57,600	0	0	230,400	0	36,612	11,681	0	0	0		48,293	182,107
	46	1	64,300	64,300	64,300	64,300	0	0	257,200	0	57,675	33,465	19,565	4,717	0		115,422	141,778
	47	1	34,090	34,090	34,090	34,090	12,041	17,058	165,459	0	8,361	3,458	0	0	0	0	35,464	129,995
Sask. River	51	1	83,780	83,780	83,780	83,780	83,780	118,688	537,588	0	73,927	79,213	49,063	39,414	60,456	70,353	372,426	165,162
	52	1	17,960	17,960	17,960	17,960	17,960	25,443	115,243	0	1,289	432	24,405	21,498	42,113	726	90,463	24,780
	53	1	134,600	134,600	134,600	134,600	134,600	190,683	863,683	0	93,734	61,693	39,293	79,195	122,632	219,734	616,281	247,402
	54	1	7,060	7,060	7,060	7,060	7,060	10,002	45,302	0	0	640	0	0	0	0	640	44,662
	55	1	26,300	26,300	26,300	26,300	26,300	37,258	168,758	0	21,417	0	24,895	28,557	37,454	31,130	143,453	25,305
	56	1	67,250	67,250	67,250	67,250	67,250	95,271	431,521	0	50,458	68,644	72,282	114,978	45,844	82,330	434,536	-3,015
Highrock	60	1	21,110	21,110	21,110	21,110	21,110	29,906	135,456	16,297	0	5,936	20,464	21,402	25,842	41,506	115,150	20,306
	61	1	38,830	38,830	32,035	25,240	25,240	35,757	195,932	0	14,494	0	9,904	0	9,904	0	34,302	161,630
	62	1	98,490	98,490	98,490	98,490	98,490	139,528	631,978	0	77,013	52,098	40,425	99,221	75,509	103,682	447,948	184,030
	63	1	124,000	124,000	102,300	80,600	80,600	114,183	625,683	0	111,399	92,737	105,729	80,827	51,333	56,399	498,424	127,259
	64	1	179,160	179,160	147,807	116,454	116,454	164,977	904,012	0	18,832	23,148	12,280	4,266	0	0	58,526	845,486
	65	1	100,180	100,180	82,649	65,117	65,117	92,249	505,492	0	0	0	0	0	0	9,720	9,720	495,772
	66	1	84,220	84,220	69,482	54,743	54,743	77,553	424,961	0	5,354	0	0	8,619	28,875	0	42,848	382,113
Nelson River	83	1	190,050	190,050	156,792	123,533	123,533	175,005	958,963	0	108,920	121,060	87,402	122,322	104,929	103,186	647,819	311,144
	84	1	174,600	174,600	144,045	113,490	113,490	160,778	881,003	0	152,066	136,110	106,008	111,139	120,252	153,056	778,631	102,372
	85	1	121,130	121,130	99,932	78,734	78,735	111,541	611,202	0	62,015	120,416	95,259	64,097	85,841	68,587	496,215	114,987
87	1	115,380	115,380	95,189	74,997	74,997	106,246	582,189	0	3,957	10,826	4,533	44,774	26,924	72,745	163,759	418,430	
	89	1	33,050	33,050	27,267	21,483	21,483	30,434	166,767	0	0	0	0	0	0	0	0	166,767
Inco Strip		1	41,100	41,100	33,908	26,715	26,715	37,846	207,384	0	11,935	1,027	3,185	8,217	12,180	34,641	71,185	136,199

Southern Area reduction - FMUs 12,14,45,46 & 47

Flexible Utilization 65 % of AAC

Data may include bush estimates

Operating Levels
Operating Level 1 - Volume of all working groups whose type aggregate includes 55 cubic meters per hectares of Jack Pine, Black Spruce, White Spruce and Balsam Fir Species.

Operating Level 3 - Volume of all working groups whose type aggregate includes 25 cubic meters per hectares of Jack Pine, Black Spruce, White Spruce and Balsam Fir; or 40 cubic metres per hectare of Trembling Aspen, Balsam Poplar, White Birch, Other Hardwoods and Softwood (Other Hardwoods, Tamarack and Cedar are included in their working group only).

FML # 3 – Louisiana Pacific Canada Ltd.
Harvest Control
January 1, 1999 – April 30, 2003

HARDWOOD (m3)

FOREST SECTION	FMU	OPERATING LEVEL	AAC YR 1 (1999)	AAC YR 2 (2000)	AAC YR 3 (2001)	AAC YR 4 (2002)	AAC YR 5 (2003)	5 X AAC	OPENING BALANCE	YR 1 HARVEST (1999)	YR 2 HARVEST (2000)	YR 3 HARVEST (2001)	YR 4 HARVEST (2002)	YR 5 HARVEST (2003)	YTD CUT	BALANCE
Mountain	10	1	100,920	136,070	136,070	136,070	136,070	645,200	0	30,697	13,764	6,279	23,409	15,290	89,439	555,761
	11	1	124,260	144,200	144,200	144,200	144,200	701,060	0	21,685	11,741	45,782	51,157	42,713	173,078	527,982
	13	1	468,900	468,900	545,700	545,700	545,700	2,574,900	0	389,184	377,189	398,842	341,075	397,490	1,903,780	671,120

SOFTWOOD (m3)

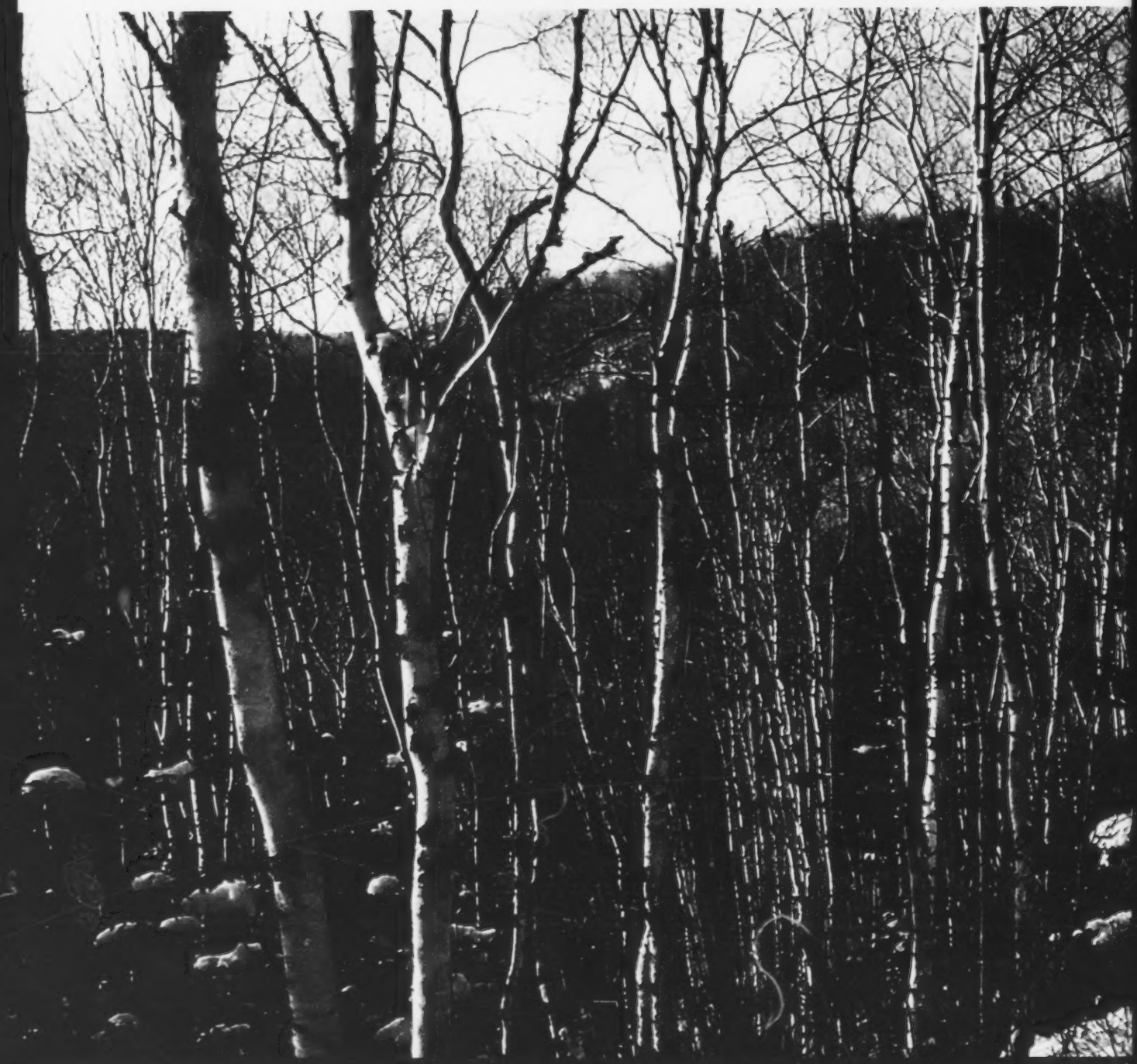
FOREST SECTION	FMU	OPERATING LEVEL	AAC YR 1 (1999)	AAC YR 2 (2000)	AAC YR 3 (2001)	AAC YR 4 (2002)	AAC YR 5 (2003)	5 X AAC	OPENING BALANCE	YR 1 HARVEST (1999)	YR 2 HARVEST (2000)	YR 3 HARVEST (2001)	YR 4 HARVEST (2002)	YR 5 HARVEST (2003)	YTD CUT	BALANCE
Mountain	10	1	not reported	210	210	210	210	840	0	not reported	0	0	0	180	180	660
	11	1	not reported	18,630	18,630	18,630	18,630	74,520	0	not reported	1,867	2,581	3,600	5,153	13,201	61,319
	13	1	not reported	199,220	199,220	199,220	199,220	796,880	0	not reported	188,103	172,452	152,239	198,220	711,014	85,866

Change in ACC volume - LP is now reporting a total, instead of a sub-total from the Provincial AAC summary.

Operating Level 1 - Volume of all working groups whose type aggregate includes 55 cubic meters per hectare of Jack Pine, Black Spruce, White Spruce and Balsam Fir Species.

Notes

Notes



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